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DECEMBER - 2019

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# CONTENTS

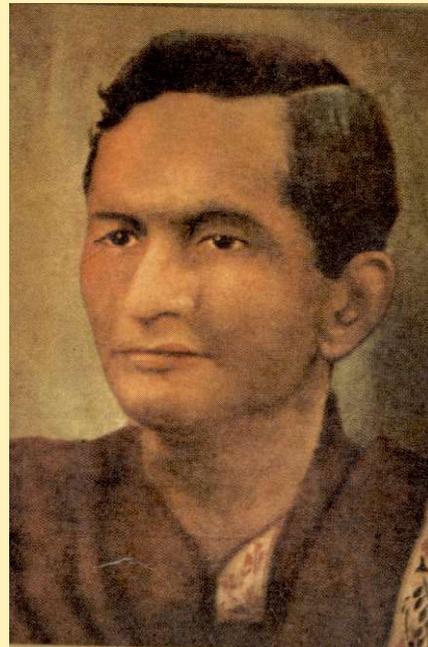
DECEMBER - 2019

|   |                                  |        |
|---|----------------------------------|--------|
| <b>Buddhist Monuments of Odisha -<br/>A Study of Forms and Patronage</b>                    | <i>Sunil Kumar Patnaik</i>       | ... 1  |
| <b>Swami Vivekananda on Education</b>   | <i>Rabindra Kumar Behuria</i>    | ... 8  |
| <b>Bakshipatra : A Born Rebel</b>   | <i>Bhaskar Parichha</i>          | ... 17 |
| <b>History of Cuttack City</b>  | <i>Dr. Sudarsan Pradhan</i>      | ... 19 |
| <b>Ancient Ports in Odisha : A Historical Review</b>  | <i>Dr. Mohammed Yamin</i>        | ... 27 |
| <b>Revival of Millet as Nutraceutical<br/>(A Success Story of OMM in Tribal Hinterland)</b> | <i>Dr. Saroj Kumar Dash</i>      | ... 31 |
| <b>Global Climate Change</b>  | <i>Dr. Manas Ranjan Senapati</i> | ... 40 |
| <b>Climate Is Changing, Why Not We ?</b>  | <i>Santosh Pattanaik</i>         | ... 42 |
| <b>Environment and the Perilous Plastic</b>   | <i>Akshaya Kumar Nayak</i>       | ... 44 |
| <b>Media and Social Responsibility</b>  | <i>Barada Prasanna Das</i>       | ... 50 |
| <b>Paris</b>  | <i>Sonali Mohapatra</i>          | ... 51 |
| <b>When Spring Comes</b>  | <i>Prabhudutt Dash</i>           | ... 52 |

# WE REMEMBER



*Pathani Samanta*

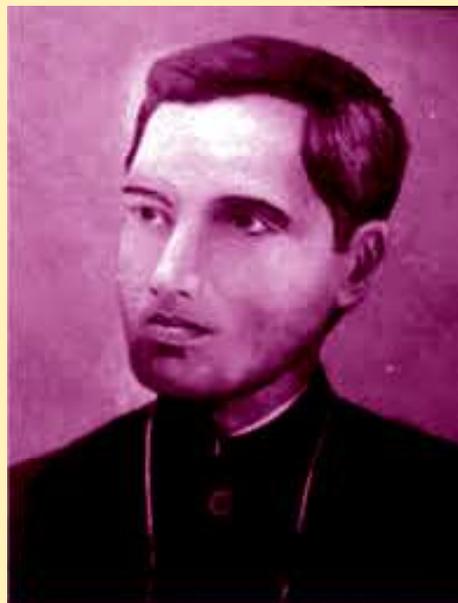


*Kantakabi Laxmikanta Mohapatra*

# WE REMEMBER



*Maharaja Shriram Chandra Bhanja Deo*

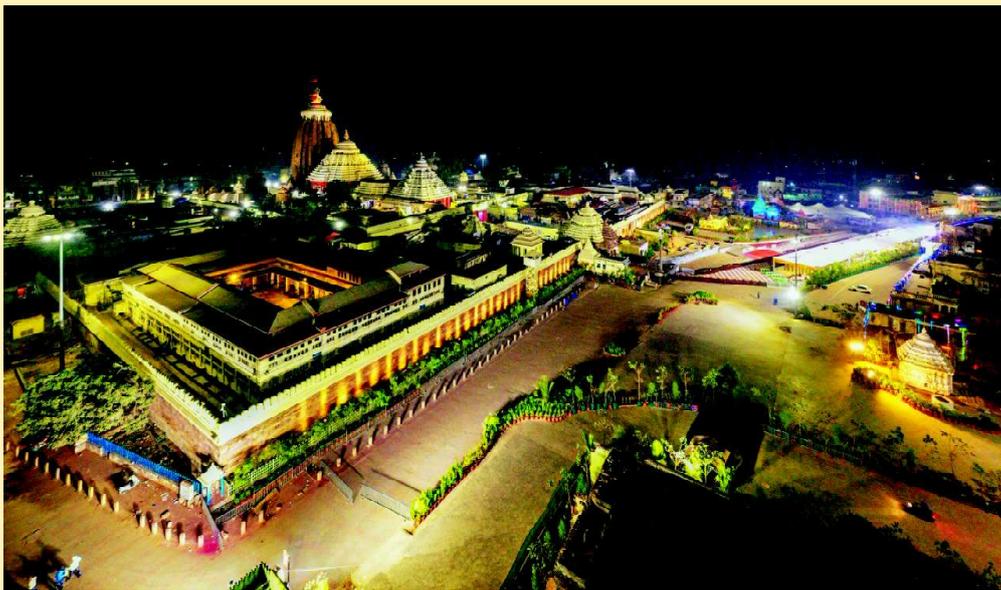


*Pandit Nilamani Vidyaratna*

## The impact of 5'T's : Transformation of Lingaraj Temple



**The impact of 5'T's :**  
**A panoramic view of Puri Shree Mandir**







**Marine Drive Eco Retreat :  
Facilitating the tourism sector as well as tourists**



## Water sports at Marine Drive Eco Retreat



## Paragliding at Marine Drive Eco Retreat



## **"Teachers and Students are the principle players in an institution like Utkal University"**

**- Naveen Patnaik  
Chief Minister, Odisha**

I congratulate all of you on the occasion of the Platinum Jubilee celebrations of Utkal University.

Utkal University has a pre-eminence in the National Higher Education Map of India. It has always taken the responsibility of leading the State's educational aspirations by achieving academic excellence. It has also been serving the learning needs of the state and the nation through the creation of potential young minds. This reminds me of the contribution of Maharaja Krushna Chandra Gajapati, Pandit Nilakantha Das and Pandit Godabaris Mishra among others



who visualised the capitalisation of the State's intellectual resources through this University. I pay my sincere tributes to these great sons of Odisha on this occasion.

Teachers and students are the principle players in an institution like this. Teaching-Learning is an ongoing and evolving process. Management, infrastructure, learning resources and even curriculum are facilitating factors. The outcome of this entire exercise is quality human resource.

**Improving the quality of education at all levels of our education system is a top priority of my Government.**

Improving the quality of education at all levels of our education system is a top priority of my Government. The Government of Odisha has sanctioned Rupees one hundred crore to Utkal University for opening six Centres of Excellence. The University has already received Rupees 40 crore in the current academic year. Besides, funds have also been provided for the infrastructure development of the University.

The youth are the real potential of a nation. Their education, knowledge, creativity, innovation abilities and an undaunted spirit to conquer the world will decide the future of the nation. As Odisha is now moving on the path of an unprecedented development process creating global benchmarks in many fields, I would call upon you to join this movement making your presence felt at all levels of success and achievements.

I wish all of you a very bright future.

**[Speech of Hon'ble Chief Minister on the occasion of the Platinum Jubilee celebrations of Utkal University.]**

**"In 1951 Biju Patnaik, at the age of 34, exhibited exemplary leadership by instituting the Kalinga Prize for popularisation of science globally"**

I am delighted to be here amongst all of you. It is very heartening to felicitate Mr. Erik Jacquemyn of Belgium, the UNESCO Kalinga Prize Winner for popularisation of Science for the year 2017. I congratulate Mr. Jacquemyn and welcome him to Odisha.

Mr. Erik Jacquemyn is a leading International Expert in Science Communication. He is also a specialist in development and management of Science Centres and Science & Interactive Museums Worldwide. He is appreciated worldwide for his extraordinary creativity and his deep sense of dedication to Science & Technology Museums.



As we all know, in 1951 Biju Patnaik, at the age of 34, exhibited exemplary leadership by instituting the Kalinga Prize for popularisation of science globally. We need to follow his footprints in spreading the wings of scientific temper far and wide, so that the common man gets the benefits of Science & Technological advancements.

So far, Sixty Nine great scientists and science communicators from 25 countries have been adorned with this Coveted Award including Mr. Erik Jacquemyn. He is indeed a role model for others. I again congratulate him, and thank Kalinga Foundation Trust and UNESCO for their noble endeavours.

[Speech of Hon'ble Chief Minister on the occasion of the UNESCO Kalinga Prize Award Ceremony]

**"The uniquely Indian ideal of Ahimsa should be incorporated in the Preamble to the Constitution to pay tribute to the Father of our Nation and to ensure peaceful transformation of society"**

**- Naveen Patnaik  
Chief Minister, Odisha**



Today is Constitution Day. It is a historic day as on this day on 26<sup>th</sup> November 1949 the Constitution was adopted and enacted by the Constituent Assembly which gave to the people of India the Constitution, the fundamental law of our land. The work of the Constituent Assembly of India and the framing of the Constitution of our country has been described by renowned American expert on Indian Constitution Professor Granville Austin as the second most important event in the history of Constitution making in the world after the Philadelphia Convention of 1777. The operation of the Constitution for seven decades in India constitutes a tribute to the Indian genius in sustaining parliamentary democracy and registering impressive social, economic, educational, scientific advancement of the nation without trampling upon the civil and fundamental rights of people. Celebration of Constitution Day is a celebration of the ideals of liberty, equality and fraternity and secularism which are enshrined in the Constitution for ensuring good governance and comprehensive cultivation of what Dr. B R Ambedkar described as “constitutional morality” so that people of India not only enjoy political democracy but also social and economic democracy.

It is for this very reason that on the occasion of the celebrations of 150<sup>th</sup> birth anniversary of Mahatma Gandhi I suggested that the uniquely Indian ideal of Ahimsa should be incorporated in the Preamble to the Constitution to pay tribute to the father of our nation and to ensure peaceful transformation of society.

It was Dr. Ambedkar who in his last speech in the Constituent Assembly very thoughtfully stated that with the adoption and enactment of the Constitution only constitutional methods should be adopted by all Indians and all concerned to achieve objectives enshrined in the Constitution. We need to be vigilant to preserve, protect and defend the Constitution. In doing so we defend the unity and integrity of our country which is sustained by our Constitution to which we owe allegiance as per the oath we have taken as the Members of this august House.

It is the bounden duty of each of us as also the citizens of India to uphold the Constitution to take forward the progress of India based on constitutional and republican values. Let us be mindful that the Constitution is the binding glue which holds the nation together. On this occasion we pay tribute to the framers of the Constitution and gratefully recall seminal contributions of the Constituent Assembly Members from Odisha Biswanath Dash, Bichitrananda Das, Sarangadhar Das, Lal Mohan Pati, Yudhisthira Mishra, Malati Choudhury, N.Madhaba Rao, Krushna Chandra Gajapati Nrayan Deo, Harekrushna Mahatab, Laxminarayan Sahu, Lokanath Mishra, Nandakishore Das, Santanu Kumar Das and Raja Krushna Bose.

Once again let us renew our pledge to uphold the Constitution in letter and spirit for further deepening the roots of our democracy.

[Speech of Hon'ble Chief Minister on Constitution Day]

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**"Human Rights assume utmost importance in the present day world after adoption of the universal declaration of human rights by UN General Assembly in 1948"**

**- Naveen Patnaik  
Chief Minister, Odisha**



I am delighted to be here today to attend the celebration of World Human Rights Day. I express my sincere thanks to Hon'ble Chairman, Odisha Human Rights Commission for having organised this function.

Human Rights assume utmost importance in the present day world after adoption of the universal declaration of human rights by UN General Assembly in 1948. It is a historic landmark in the annals of humanity in breaking the barriers based on caste, colour, religion and nationalism.

Thanks to the vigilance of women delegates that the Universal Declaration of Human Rights (UDHR) became gender neutral and provided the same rights to women as it guaranteed to men. The critical mass of women in legislature and in other spheres of collective life is now understood as a step forward to the cause of human rights. By fielding women in one-third of the parliamentary seats of Odisha and creating numerous other opportunities for women empowerment, Odisha has created a revolutionary trend which is being acknowledged across the nation as a major step for inclusive politics and development.

**Our freedom struggle led by Mahatma based on the principles of non-violence was as much a struggle for our independence as for human rights of all.**

Our freedom struggle led by Mahatma based on the principles of non-violence was as much a struggle for our independence as for human rights of all. My proposal for inclusion of non-violence in the Preamble of our Constitution will be a step forward in the protection of human rights.

My Government is committed to protect the rights and upholding the dignity of people and is also working to ensure that no one is deprived of the basic facilities provided by the Government. Transformation can take place only if individual freedom and dignity are guaranteed.

Let us all rededicate ourselves to uphold and protect human rights of all, especially of those who have become victims of structured forms of inequality and other forms of exclusion.

Chairman Odisha Human Rights Commission Shri Justice B.P. Das presided over the function. Former Chief Justice of India Shri Justice G.B. Patnaik, Minister Law & Panchayati Raj Shri Pratap Jena also spoke on the occasion. Member, OHRC Shri Asim Amitabh Das gave the welcome address. Chief Minister Shri Naveen Patnaik felicitated Former Members of the OHRC Shri Sudhansu Mohan Patnaik, Shri R.N. Bohidar, Shri B.K. Mishra and Shri B.K. Patnaik on this occasion.

A meeting was organized at Jayadev Bhawan by OHRC on the occasion of World Human Rights Day.

[Speech of Hon'ble Chief Minister on the occasion of World Human Rights Day]

## Editor's Note



### MO Sarkar

People are the soul of democracy...Every institution in a democracy is for the people..created by their money..to empower and serve the people

This police station exists for serving the people....they own this institution

Every person visiting this institution will be treated with dignity and his issues have to be treated in a professional and ethical manner

People are the masters and ..those who work here are paid by the people

— Naveen Patnaik



On the occasion of 150th Birth Anniversary of Mahatma Gandhijee, the concept of "Mo Sarkar" has touched the heart of every Odia. Driven by 5T philosophy, it is set to transform Odisha to glorious heights.

Handwritten signature of Keesari Kalasdey.

Editor, Odisha Review

# Buddhist Monuments of Odisha - A Study of Forms and Patronage

*Sunil Kumar Patnaik*

The advent of Buddhism traces back to 6<sup>th</sup> century B.C. Siddhartha Gautama, a Sakya Prince left all the worldly pleasure in quest of the truth and reality of life. Though, it took some years to realize the reality of life, but when He was showered with the divine light of enlightenment, instead of keeping it to himself, Goutam Buddha preferred to enlighten others as well. The teachings preached by Gautam Buddha were warmly accepted by a large number of people and came to be known as a new school of thought, Buddhism which later turned into a major religion of the world and the kings, emperors, traders and commoners built monuments, kept relics and offered gifts to pay ovation to the Master Teacher. Odisha is fortunate to have received a good deal of monuments and relics throughout history at least up to 15<sup>th</sup> century A.D.

Odisha, the land on the eastern sea shore of Bay of Bengal was known variously as Kalinga, Utkal and Odra in ancient times. Major portion of this extensive territory was known in ancient time as the land of Kalingas, a class of people who are referred to in Brahmanical literature, in old Pali cannons as well as Asokan inscriptions. In its earliest history, Odisha had become a province and later even the center of great empire under the two of the most important rulers of early India i.e, under Asoka (3<sup>rd</sup> century

B.C.), and Kharavela (1<sup>st</sup> century B.C.). Then, the stratigraphy is very clear with influence of Kushanas and Guptas, down to Gangas and Gajapatis in 15<sup>th</sup>–16<sup>th</sup> century A.D.

The strategic geographical location of Odisha helped her in rising to great heights in respect of trade and commerce from pre-Buddhist period. Odisha was served as a bridge between the trans-oceanic and inland trade of India, causing migration of cultural traits along with trade and commerce. With the rise of trade and commerce in the historical periods it is but obvious; the growth of urbanization leads building of various monuments which now put together as resource for development of Tourism in the State.

With the archaeological spade in different parts of Odisha, a large amount of new materials have emerged in recent years regarding the trade and commerce and growth of Buddhist Monuments. Here, an attempt is made to discuss some aspects of the trade and urbanization that has its significant contribution to know the forms and patronage of Buddhist Monuments of Odisha during the historical periods which constitute a major resource material for our historical research that become our tangible heritage when we look to its monumental wealth and reuse it for area development through tourism. But, all that need

is sincere researchers, well trained archaeologists and tourism promoters.<sup>1</sup>

The excavated materials of Sisupalgarh, Jaugarh, Lalitgiri, Manikapatna and the existing monuments such as Asokan Edicts at Dhauli and Jaugada suggest to some extent the fact that Odisha or Kalinga of 3<sup>rd</sup> century B.C, was a well populated geographical entity. The coins, coin moulds, some precious beads, clay and iron artifacts, structural remains and pot-shreds found at these places, indicate the existence of people of various professions, such as artisans, craftsman, masons and traders, suggesting urbanization based on a complex set of socio-economics. These urban centers must have depended on existence of villages producing an agricultural surplus. Ancient Odisha or Kalinga was good producer of rice, bajra, cotton fabrics, *samudra lona* (salt), elephant, silk, *dukula* (a kind of cloth) gems, pearls, oyster, perfumes, conch shells, ornaments, sugar and earthen pottery etc. Diamond was probably one of the valuable commodities sold at Kalinganagar. The mention of all these were found in the literary works viz, *Jatakas*, *Arthashastra of Kautilya*, *Mahabhasya of Patanjali*, *Charaka Samhita*, *Samyaktta Nikaya* and *Indica* of Megasthenes. An examination of the wood remains from Sisupalgarh suggests that there has been no major climatic change in this part of Odisha during the last two thousand years. This evidence further throws much light on the present day productions which almost all the goods found in this region described above.<sup>2</sup>

During this period we have ample evidence of at least two metropolis, i.e, one at Tosali (Sisupalgarh/Radhanagar) and other one is Samapa at Jaugada. Both are located in the coastal tract. The fortification though little is available at Sisupalgarh and suggest status of a

*mula-nagara* which most of the cities of this period in northern India was fortified which was also found at the excavations Aahichhatra, Rajghat, Kausambhi, Harsh-ka-Tilla, (Kurukshetra) etc. Now, these city centers were well connected with roads and communication network and other rural pockets existed in and around these cities and were storehouse of different products as described above. Evidences are in hand that during Mauryan period an important route that led from Mathura to Vidisa, and Sanchi, joined with the southern route from the Ganges plain and its eastern branch led to the Sahajati sector on the Narmada. There was a trade route linking Tosali with Vidisa and Ujjain which is supposed to be the royal route that was extensively used during Mauryan period<sup>3</sup>. The recent archaeological explorations in the places like Kankia (Radhanagar), Manamunda-Asurgarh, Boud on the Mahanadi belt and Sirpur, and Ratnapur substantiate to the fact. There are several terracotta inscriptional evidences found from Radhanagar partial excavation which all focus that there was an early urban centre. Further, on the coastal line Tosali had directly come in contact with Tamralipti in Bengal on the north-east and Kaveripattanam on the south-east, thus forming a trade circuit. By the second century B.C the entire east-coast seemed to have been linked in a single coastal network.<sup>5</sup>

By this time references in early Sanskrit and Pali literature indicate private ownership of land and rise of the very rich households of land owners – the *grahapatis* – in the middle Ganga valley. It was from the ranks of the *grahapatis* that the trading communities of *Vanijas and Setthis* arose and salt, metals, textiles, and pottery were the standard items of trade.<sup>6</sup> (This growing long distance trade between the Ganga valley and the Deccan peninsula had its impact in

the east coast. The existing coastal trade route, starting through the port towns Tamralipti, Palura, Pithunda (?) and down below Kaveripatnam made accessible these materials for transportation. On the whole ancient Odisha and its port town had the market for inland commodities as well as to export the materials to outside. Thus, the hinterland on the back, Odisha from 2<sup>nd</sup> c. BC to 2<sup>nd</sup> c. AD, was formed a very prosperous state of which we had evidence in the Hatigumpha inscriptions of Kharavela. Further, the evidence of Rouletted ware that is one of the indicator of this trade network in the sub-continent which was first identified by Wheeler at Arikamedu on the east coast. He assigned to it a date of the 1<sup>st</sup>–2<sup>nd</sup> century A.D. Since then the ware has been found all along the east coast from Chandraketugarh and Tamruk in the east coast from in the lower Ganga delta to Sisupalgarh and Manikapatna and Radhanagar on the Odishan coast, several sites in the lower Krishna basin to Korkai of Srilanka. Thus, in the 2<sup>nd</sup> – 1<sup>st</sup> c. BC to 2<sup>nd</sup> AD., the east coast was linked in a single trade circuit with pockets of ruling elites.

Hoardings of Kushana and Puri-Kushana coins have been unearthed mostly in the coastal district ranging in time between c. 1<sup>st</sup> and 4<sup>th</sup> centuries AD. Further, Roman coins from Bamanghaty in Mayurbhanj and Sisupalgarh and Roman clay bullae from Radhanagar, supplies the evidence to surmise the trade relations. To add more, recently inscriptions from Lalitgiri records donations by merchants and traders that can be linked with a similar donation found from Nagarjunakonda that mentions a guild deals in betel leaves. The importance of the eastern maritime trade to the later Satavahanas is evident from the issue of their ship type coins found along the Andhra coast, depicting double masted ships.<sup>7</sup>

By 3<sup>rd</sup> century A.D, Mediterranean trade had declined and many urban centers in the north and western Deccan underwent degeneration and decay which was also seen in the urban centers like Dantapura, Kalinganagar and Palura of Odisha coast which after 3<sup>rd</sup> – 4<sup>th</sup> century A.D, little reference is available regarding the prosperity. Moreover, we have the Sisupalgarh (Tosali or Kalinganagar ?) – an urban center of Odisha marked the decline and by fifth century AD, the entire settlement vanishes, perhaps due to decline of maritime trade. The recent ongoing excavation at Kankia (Radhanagar) shows that there was an early historical settlement with fortifications and was existing from 4<sup>th</sup> - 3<sup>rd</sup> century B.C to early part of 5<sup>th</sup> century A.D. The city center is surrounded by number of Buddhist settlements like Langudi, Kayama, Vajragiri, Tarapur and Deuli which form cluster like that of Buddhist settlements of Deccan.

The next phase of Odisha history with 4<sup>th</sup> century to 600 AD, when the minor dynasties like Matharas, Nalas, Manas etc ruled over different pockets of Odisha. The rise of several dynasties in different pockets of Odisha during this period, with most of them issuing land grants to Brahmanas and religious establishments implies large scale agrarian expansion, a process of which most have had important bearing on the social process and structure.

During this period though major trade declined to some extent still Tamralipti continued to be a famous port – through which copper of Simhabhum was exported in large quantities. Contemporary to Matharas of Kalinga, Nalas ruled over the Bastr.-Koraput region which was great of the ancient Atavika territory and later on, become well known in history as land of Trikinga. Trade routes from Kalinga to Kosala as well as to central and northern India passed

through their Kingdom and the rivers like Indravati and Godabari connected with Vengi and other territories in the south. The circulation of gold coins by the kings of dynasty testifies the prosperity of the Nala kingdom.

Again another contemporary dynasty known as Manas were ruling over the territory laying to the north of the Mathara, kingdom, beyond the river Mahanadi. Hoards of 147 coins of this dynasty have been discovered from the village Nanduru near Gandibedha in Balasore district. Paleographic ally according to S N Rajguru dated to 5<sup>th</sup> century A.D.<sup>8</sup>. The Manas is said to have originally a merchant family. Thus the Manas who were ruling over north – eastern part of Odisha during 5<sup>th</sup> – 6<sup>th</sup> century AD migrated to Chhotonagpur and south of Bihar in subsequent period. As the ruling dynasty itself is merchant so it can be surmised that there was brisk trade relations and trade was the principal activity of the people of the region in 5<sup>th</sup> – 6<sup>th</sup> century AD.

Further, the excavation at the Buddhist sites of Lalitgiri and Ratnagiri, Langudi and Udayagiri shows that during this period enormous growth were marked in these sites, although the royal patron of *Sri Chadraaditya Vihara*, *Ratnagiri Vihara*, *Singhaprasta Mahavihara*, *Madhavpur Mahavihara* of Odisha is not known. It is believed from the material evidences available on the site that the establishment received large chunk of donations from the merchant pilgrims or the merchant monks that was the style of that century, which are evidenced from the western India cave monasteries like Ajanta, Pitalkhora, Bagh etc<sup>9</sup>. Since, the above Buddhist establishments of Odisha had close relations with the Buddhist epicenters of Vaisali, Sravasti, Rajgrihia, Nalanda, Saranath, Tamralipti to down Nagarjunakonda, Dhyna Kataka etc, are also

known from literature, inscriptions and material remains.

The Buddhist sites were always developed in India during historical period with the patronage of traders, merchant community and the ruling kings. Such patronization have seen in the Buddhist sites discovered at Kuruma, Lalitgiri, Ratnagiri, Udyagiri, Langudi, Kayama, Vajragiri, Tarapur, Deuli, Solampur, Ayodhya, Ganiapalli, Kurum, Boudh and many other places of Odisha. The Buddhist sites in common portray the array of development in art, religion, building technology and community life which otherwise called our Heritage. Heritage resources are now considered to look upon the cultural background of country. Let us discuss briefly the strength and weakness of our Buddhist monuments.

The **Lalitgiri** site had its continuation from 2<sup>nd</sup> century B.C to 14<sup>th</sup> century A.D. It is a site having an ancient Maha Stupa which yielded bone Relic Caskets, wrapped in golden foil. It has a Maha Chaitya like Nagarjunkonda of Andhrapradesh and series of well built monasteries for the monks. The site as such has the continuous history of 1500 years. The development of Buddhism could be known from the existing monuments such as three number of well built monasteries, Maha Stupa, Chaitya and plethora of small stupas. Besides, sculptures, inscriptions of Kushana, Gupta and Post-Gupta periods indicate its continuity and patronage. The site singularly speaks volumes about the phases of Buddhism i.e Hinayana, Mahayana, and Vajrayana. One sealing revealed a name *Chandraditya Mahavihara*. The heritage conservation has taken up by Archaeological Survey of India and now is a major resource for Odisha Tourism.

So, also the **Langudi** Buddhist site which brought to limelight number of inscriptions, a Maha Stupa dated back to early centuries, Rock-cut Buddhist images and monastic sites that has clue to prove sufficiently that it was a site for Theravada Buddhist in the remote past and number of activities were developed during historical period at least from 3<sup>rd</sup> century A.D to 13<sup>th</sup>-14<sup>th</sup> century. The astonishing discovery of inscribed Image of emperor Asoka is a step forward for the richness of the site. The inscription on the image reads as *ami upasaka Asokasa samchiamana agra eka thupe*, meaning the lay worshipper Asoka had built a principal Stupa. Another inscribed image (bust portion) also discovered from this site which reads *chhikarena rajna Asokena* (B.N.Mukharjee) paleographically dated to 1<sup>st</sup> century B.C/A.D. Besides the terracotta Buddha images, rock-cut Stupa and images are simply speak volumes about the rise of civilization in Eastern India. It was excavated by Odishan Institute of Maritime and South-East Asian Studies (OIMSEAS) during the last decade. Now the site is under control of ASI. However, Odisha tourism has taken up the site as one of the major resource for promotion of Buddhist tourism in the South-East Asian countries. OIMSEAS is taking research work, ASI is looking after conservation work and Odisha Tourism has taken steps by establishing an accommodation centre in the part of infrastructural development. Now, it is the responsibility of archaeologists and heritage conservators to take up research, preservation and beautification work, of course, with the help of Government and other funding agencies.

The nearby hillocks like Kayama, Vajragiri, Deuli, Tarapur etc have also Buddhist remains which are storehouse for culture and civilization of the Buddhist world. **Kayama** is a hillock known as *Gugulapahada* as that of

Gandhakuti of Rajgriha. The symbolical elephant sculpture bears the symphony of early Buddhist art and the building materials discovered on the top of the hill speak enough about Buddhism. The inscription (*Sankhalipi*) of 5<sup>th</sup>-6<sup>th</sup> century A.D, found on a rock in this hill says the name of the hill. This inscription reads as *Betal Chaitya, Gugularaba and SriSri Buddha*. This site has enough evidences to study the forms and patronage of Buddhism in ancient Odisha. Adjoining Kayama hill on the south there lies an important early historical fort site called Kankia (Radhanagar). This is the only settlement in the midst of cluster of Buddhist monuments. After two sessions (2010-11 to 2011-12) excavation the site revealed its stratigraphy date back to 4<sup>th</sup> -3<sup>rd</sup> B.C. It has its Mayurian level with brick structures, terracotta figurines, coins and Black and red ware along with inscriptions read as *Sadabhu Tissa*. The next level is marked with some building activities and findings of *triratna* terracotta ornaments, potsherds, coins and terracotta moulds of Sunga-Kusan period. The whole site is 1200 mtrs x 1200 mtrs having deposit of 6 mtrs with solid fortification wall like that of Sisupalgarh. It could be certainly a walled settlement of Buddhist period. There are enough materials of trade relationship with other countries of South East Asia. The research is underway to reach in the final stage. However it is an important early historical site of ancient India.

**Vajragiri** again a nearby hillock contains wonderful rock-cut monastery and caves. This is the place where Vajrayana form might have developed. Although major portion of the area are inhabited by the people and little remained to be excavated. However the partial excavations revealed the stratigraphy of the site date back to 6<sup>th</sup>-7<sup>th</sup> to 13<sup>th</sup>-14<sup>th</sup> century A.D. This type of monuments are seen in Aurangabad cave sites near Ajanta.

**Tarapur** Buddhist remains on NH-05 near Jaraka also revealed many inscriptional evidences of early and late period. These are *Bhikhu Tapusudanm Kesathupa*, *Kalinga raj* of 2<sup>nd</sup> century B.C and *Kilinga gadhanayakas*, *Klingadeusagadnayakasa* of 13<sup>th</sup> -15<sup>th</sup> century. The site had a Maha Stupa like that of Sanchi. The archaeological remains found at the site with railing pillars, suchis and double storied cave points to its patronage during early period. Now, only the base portion and railing pillars are available. But this heritage site is the mute witness of rise of Buddhism in Kalinga.

**Deuli** hills near Jaraka is again another marvelous site which contains remnants of a Stupa/ Monastery at the top. There is enough materials available to know about the early spread of Buddhism. The scenic beauty often reminds us to the Gidhrakuta Hilltop of Rajgriha. Similarly the nearby **Deulipal** hills has the series of Buddhist Caves again a characteristics seen in the Deccan hills near Pitalkhora the hub of Mayurian Art. Along with the sites the early urban center as said before Kankia (Radhanagar) substantiate enough materials for a trade center which is seen in almost every large Buddhist sites in India. However, at the present state of research we are not sure to draw any conclusion (?). It is still in the scholars arena to disclose and conclude. But the conglomeration of such huge settlements in a radius of 25 kilometers qualifies to be a World Heritage Site like that of Nalanda or Ajanta/ Ellora or Borbodur. Odisha is fortunate to have such huge and varied Buddhist sites which reveals systematically leafs of Indian Culture phase by phase.

The sites like **Ratnagiri and Udayagiri** also laid bare ancient Stupas and well-built monastic sites. The Stupa at Udayagiri serves as benchmark for study of Vajrayana form of

Buddhism so also the main Stupa at Ratnagiri has closely built in spoke and wheel method which has resemblance with the Stupas of Mahasnghika sect found at Amaravati and Nagarjunikonda. The sculptural wealth at these places are overwhelmed ranging from Buddha and Boddhisattva images to variety of Vajrayana icons. Perhaps these two places only houses such kind of Buddhist images rarely found in other places of India. Further, the sculptural art provides close interaction with South-East Asian features<sup>13</sup>. Archaeologists of Archaeological Survey of India have done substantial research on these sites thereby also undertaking conservation work. Odisha Tourism has also done some infrastructural facilities together with promotional efforts internationally. Some of the Buddha images at Lalitgiri are very similar to the images found at Borbodur. The historical and archaeological researchers should be encouraged to focus their research so that more and more new vistas will be opened and tourism could be worked upon by involving rural folks like that of wild life conservation projects so that local area development could be visible.

The Buddhist site **Solampur** in Bhadrak District is another major center of Buddhist art. There are about 50 Buddhist icons found in the Raghunath temple and nearby area. It was known as Solampur Mahavihara in the historical records. The Buddhist images like Buddha having a panel of his life story carved unique in Indian Art. The standing Tara image, Avalokiteswara, Jambhala, Hariti and other images tell the story of flourishing state of Buddhism during 7<sup>th</sup>-8<sup>th</sup> centuries.<sup>14</sup> It is a living museum now. We should take utmost care immediately to preserve such precious site. We should be thankful to village people that they have kept very carefully all the images and also concern about their protection. We should take a rural tourism project and link the site with major

destination like Jajpur so that economic viability from archaeology could be seen.

So also the **Kupari** of this district has monumental remains. This site again has the remnants of Monastery on a rock bed and number of Buddhist pantheon found in the present Parvati temple. There are evidences of number of monastic establishments. The remains presently available are pillars and base of monastery area.<sup>15</sup>

In the field of art and Buddhist religion the above sites were in close contact with Buddhist epi-centers of Sanchi, Saranath, Bodh Gaya Amravati and cave sites of Deccan *Sartvahapatha* (Maharashtra). It needs urgently to study and document the monumental remains and use it for the Tourism Promotion which is undertaken by Odishan Institute of Maritime and South-East Asian Studies. So that the basic charter of the Buddhist remains will be exposed and could be used for greater cause. The Buddhist Heritage as known from the above sites and the living Buddhist villages like Maniabandha, Nuapatna, Sarsara, Jirang etc probably unique in the whole of eastern India. Forms and patronage could be known from the associated materials like architecture, sculpture, inscriptions, terracotta as well as pottery study. The Heritage could be known from the living tradition as well as from the standing conserved monuments and Tourism could be bank upon as a whole from cultural link with other sites of India and South East Asia. Now, some of the Buddhist monuments like Ajanta, Nalanda, Sanchi, Bodh Gaya, Tawang near Bomdilla and the living monastic life style of Arunachal Pradesh, Sikkim, Dharmasala of Himachal, and of Odisha like Jirang, Nuapatna, Sarsara, Maniabandha are the attractions that draw tourists from worldwide. Here, we could see heritage tourism as a form of specialty travel, based on nostalgia of the past and the desire to experience diverse cultural landscapes with the different forms of monuments.

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## Swami Vivekananda On Education

*Rabindra Kumar Behuria*

One rarely comes across divinely enlightened and blessed individuals who precisely perceive and present a prophetic picture of the future. They are capable of envisioning the past, the present, and the future in the continuity. Their ideas survive the boundaries of time and space. Swami Vivekananda was one such gift of God to humanity, who spread the message of the essential unity of all faiths and religions, and the need for spiritual pursuits for achieving higher goals of human life.



Swami Vivekananda presented the true India to the whole world. The concept of 'Vasudhaiva Kutumbakam' - the world is one family is the only beacon light for survival, growth and real progress of human society, particularly in the strife-torn world of today. It was perceived in India in ancient times by our learned sages and saints and has an eternal validity. Swami Vivekananda explained and elaborated it in the global context. What a superhuman articulation

and presentation he bestowed on all of us ! The whole world was mesmerized and began to look towards India, to explore and learn about its past glory. The basic tenets of the Indian tradition of creation, generation and dissemination of knowledge were expanded in tune with the requirements and needs of the times. At the present juncture of history, when the concept of a global village is being discussed all around, there is greater need to acquire a subtle understanding and thoughts of Swami Vivekananda on

learning to live together and on universal brotherhood. Widespread awareness of his thoughts and ideals amongst teachers and would be teachers is particularly important as they have the responsibility of educating the youth.

Swami Vivekananda's ideas on various aspects of education are more relevant and are needed more today than probably during his own life time. Only he had the vision and the courage to articulate: "The true education, however, is not yet conceived of amongst us." Every time I recall

this statement to myself or repeat it to an audience of teachers and teacher educators, I find it more and more motivating, evolving and expanding. It exhorts everyone to strive hard, explore, discover, interpret and utilize all their talents for the benefit of the young learners. His ideas elevate everyone who reads and understands the meaning and the imperatives. They are capable of transforming the perception of teachers. Imagine the shape of education once every teacher starts adoring the inherent divinity of each child in the temples of learning.

### **Swami Vivekananda : His life and personality -**

A regal, majestic figure of commanding presence, vast learning and deep insight, Swami Vivekananda was barely 30 years old when he created a stir at the World's Parliament of Religions in Chicago in 1893. Three and a half years later, when he returned to India, his homeland, he was as a colossus of strength, courage, confidence, love and manliness the embodiment of the ideal of the 'man-making' and 'character - building' education he propagated.

Swami Vivekananda, or Narendranath Datta, or simply Naren, as he was called in his pre-monastic days, was born to Vishwanath Datta and Bhuvanewari Devi in Calcutta on Monday, 12 January 1863. The Datta family was rich, respectable, and renowned for charity, learning and a strong spirit of independence. Narendranath's grandfather, Durga Charan Datta, was well versed in Persian and Sanskrit languages and was skilled in Law. But after the birth of his son Vishwanath, he renounced the world and became a monk. He was then only twenty five years of age.

Vishwanath Datta was an attorney - at - law in Calcutta High Court. He was proficient in

English and Persian languages, and took great delight in reciting to his family the poems of the Persian poet Hafiz. He also enjoyed the study of the Bible and of the Hindu scriptures in Sanskrit. Though charitable to an extravagant degree and sympathetic towards poor, Vishwanath was rationalistic and progressive in outlook in matters religious and social, owing perhaps to the influence of western culture. Bhuvanewari Devi was an accomplished lady with a regal bearing. She was deeply religious. Before the birth of Narendranath, though she had daughters, she yearned for a son and asked one of relatives at Varanasi to make religious offerings to Vireswar Siva. It is said that she dreamt Late that Siva promised to be born as her son. Narendranath was born sometime afterwards.

In his early Childhood, Narendranath was rather restless and given to much fun and frolic. But at the same time, he had a great attraction for spiritual matters and would play at worshipping or meditating on the images of Rama, Sita, Siva etc. The stories of the Ramayan and the Mahabharat, which his mother told him, left an indelible impression on his mind. Traits such as courage, sympathy for the poor, and attraction towards wandering monks appeared spontaneously in him. Even in childhood, Narendranath demanded convincing arguments for every proposition. With these qualities of head and heart he grew in to a vigorous youth. Moreover, the influence of each of his parents on Narendra was different, yet together they provided a congenial atmosphere for the precocious boy to grow into an energetic young man with high ideals.

Ever since childhood, Narendra had great admiration for wandering monks, and he liked to think that one day he himself would become a monk. But his ambition only became evident

during his college days at the Scottish Church college. He began to search out scholars and spiritual leaders in order to question them. But none of them could satisfy him. It was from William Hastie, Principal of his College that he heard for the first time of Sri Ramakrishna, the saint of Dakshineswar. His meeting with Sri Ramakrishna in November 1881 proved to be a turning point in his life. About this meeting Narendra said :

He [Ramakrishna] looked just like an ordinary man, with nothing remarkable about him. He used the most simple language and I thought, 'Can this man be a great teacher?' - I crept near to him and asked him the question which I had been asking others all my life : 'Do you believe in God, Sir?' 'Yes', 'How?' 'Because I see him just as I see you here, only in a much intenser sense'. That impressed me at once ... I began to go to that man, day after day, and I actually saw that religion could be given. One touch, one glance, can change a whole life.

Sri Ramkrishna's life was one of spiritual experience and achievement. He also discovered some truths of great significance to all of us today. About this Sri Ramakrishna said : I have practiced all religions Hinduism, Islam, Christianity and I have also followed the paths of different Hindu sects. I have found that it is the same God towards whom all are directing their steps, though along different paths.

While Sri Ramakrishna tested him in so many ways, Narendranath in turn, tested Sri Ramakrishna in order to ascertain the truth of his spiritual assertions. At one stage, after the passing away of his father in 1884, Narendranath's family suffered many troubles and privations. At the suggestion of his master, Narendranath tried to pray to mother Kali at Dakshineswar for the alleviation of his family's distress. He found,

however, that although his need was for wealth, he could pray only for knowledge and devotion.

Gradually, Narendranath surrendered himself to the master Sri Ramakrishna. With infinite patience, Sri Ramakrishna calmed the rebellious spirit of his young disciple and led him forth from doubt to certainty and from an anguish to spiritual bliss. But, more than Sri Ramakrishna's spiritual guidance and support, it was his love which conquered young Narendranath, love which the disciple reciprocated in full measure.

Sri Ramakrishna carefully guided Narendranath and a band of other young dedicated disciples and the master chose Narendra as the leader of the group. After the passing away of the master in August 1886, many of the young disciples gathered together in an old dilapidated building at Baranagar under the leadership of Narendranath. Here, in the midst of a life of intense austerity and spiritual practices, the foundation of the Ramakrishna brotherhood was laid. It was during these days that Narendranath, along with many of his brother disciples, went to Antpur; and there on Christmas Eve (1886), sitting round a large fire in the open, they took the vow of 'Sannyas'. With a total rejection of material possessions and an unshakable commitment to their master and his teachings, they endured unbelievable privations and devoted themselves to spiritual practices.

In July 1890, Swami Vivekananda took leave of Sri Sarada Devi, the holy consort of Sri Ramakrishna, who was the spiritual guide of the young monks after the Master's passing away. He also took leave of his brother monks, with the firm resolve to cut himself free from all ties and go into the solitude of the Himalayas, for he felt it essential to be alone. In the words of Romain Rolland : "This was the great departure. Like a

diver, he plunged in to the ocean of India covered his tracks. Among its flotsam and jetsam, he was nothing more than some nameless Sannyasis in saffron robe among a thousand others. But the fire of genius burned in his eyes. He was a prince despite all disguise.”

Travelling throughout the length and breadth of India, mostly on foot, Narendranath was trying to work out a purpose for his life. While on the road, he often faced starvation and frequently found himself with nowhere to stay. To Narendranath, this was an opportunity to study India and its needs at first hand. He observed that his country possessed a priceless spiritual heritage, but had failed to reap its benefit. The weak points were poverty, caste, neglect of the masses, oppression of women and a faulty system of education. How was India to be regenerated? He came to the conclusion :

We have to give back to the nation its lost individuality and raise the masses ... Again, the force to raise them must come from inside.

At about the same time Vivekananda completed his tour of India, he was asked to represent Hinduism at the World's Parliament of Religions, to be held that year (1893) in Chicago. Vivekananda also felt that this might give him an opportunity to do something for his country. So he agreed to go. When the Parliament of Religions convened in September 1893, Vivekananda created a sensation. While other delegates spoke of their own faiths and creeds, Vivekananda spoke of the God of all, the source and essence of every faith. When his turn came, he mentally bowed down to Sarasvati, the goddess of learning, and then began his address with the words, “Sisters and Brothers of America.” Immediately, there was thunderous applause from the vast audience, and

it lasted for full two minutes. Seven thousand people rose to their feet as a tribute to something, they knew not what. The appeal of his simple words of burning sincerity, his great personality, his bright countenance, and his orange robes was so great that next day the newspapers described him as the greatest figure in the Parliament of Religions. His call for religious harmony and acceptance of all religions brought him great acclaim. The simple monk with a begging bowl had become the man of the hour.

When the Parliament was over, he went on a lecture tour in the midwest and the East coast of the United States. People in large numbers, particularly intellectuals, came to hear him speak wherever he went, thus fulfilling his master's predication that he would some day become a ‘World teacher’.

After giving up his lecture tour, Swami started giving free classes on Vedanta and Yoga in New York. His stay in the west, which lasted till December 1896, was packed with intense activity: besides innumerable lectures and classes at New York, he founded a Vedanta society there; he trained a band of close disciples at the Thousand Island park; and wrote Raja yoga and paid two successful visits to England, where he gave the lectures which now form Jnanayoga. There he made some disciples, prominent among them being Capt. and Mrs Sevier, sister Nivedita and E.T. Sturdy. In May 1896, the Swami met Max Muller and his wife at Oxford. During his tour of Europe in the summer of 1895, he also met the famous German Orientalist Paul Deussen.

On 1 May 1897, a few months after his return to Kolkata, the swami set his plan in motion when he founded the Ramakrishna Mission. The aims and ideals of the mission propounded by the Swami were purely spiritual and humanitarian.

This was the beginning of an organised movement to help the suffering masses through educational, cultural, medical and relief work. He had inaugurated the machinery to carry out his ideas.

It may not be out of place to mention that in a speech made in 1993, Federico Mayor, Director - General of UNESCO, stated: **I am indeed struck by the similarity of the constitution of the Ramakrishna Mission which Vivekananda established as early as 1897 with that of UNESCO drawn up in 1945. Both place the human being at the centre of their efforts aimed at development. Both place tolerance at the top of the agenda for building peace and democracy. Both recognise the variety of human cultures and societies as an essential aspect of the common heritage.**

In June 1899, he returned to Europe with one of his brother disciple and also sister Nivedita, an Irish disciple. After a short stay in London, Vivekananda sailed for New York. A few months later he left for California where a series of lectures and classes led to the founding of the Vedant society in San Francisco. The main event of this period was the starting of the Shanti Ashram, which he placed under the Charge of Swami Turiyananda. But the Swami was becoming more and more aware of the approaching end. He wrote to Miss Mac Leod : “My boat is nearing the calm harbour from which it is never more to be driven out.”

On 1 August 1900, he arrived in Paris to participate in the Congress of the History of Religions, held there on the occasion of the Universal Exposition. With some friends, he left Paris in October and visited Hungary, Rumania, Serbia and Bulgaria, before arriving at Constantinople. Then they proceeded to Athens

and Cairo. In Cairo, the Swamy suddenly became restless to return to India; he had a premonition of Captain Sevier’s death. He took the first available boat and hurried back to India and reached the Belur Math on 9 December 1900, without any previous intimation. For the most part he spent his last days at the Belur centre, training his young followers and guiding the organisation. On 4 July, 1902, he meditated from 8 to 11 in the morning, rather unusually. In the afternoon, he went out for a walk with Swami Premananda, explained his plan to start a Vedic school. In the evening, he retired to his room and spent an hour in meditation. Then he lay down quietly and after some time took two deep breaths and passed in to eternal rest. he was only 39 years of old.

He had renounced his mortal body, but his words uttered in 1896 to Mr. Eric Hammond in England - remained to reassure everyone of his immortality: **“It may be that I shall find it good to get outside my body - to cast it off like a worn out garment. But I shall not cease to work ! I shall inspire men everywhere until the world shall know that it is one with God !”**

#### **Vivekananda’s idea on Education :**

Education is the manifestation of the perfection already in man. Vivekananda’s definition of education is one of remarkable insight. First of all, the word ‘manifestation’ implies that something already exist and is waiting to be expressed. The main focus in learning is to make the hidden ability of a learner manifest. As Vivekananda said, “what a man “Learns” is really what he “discovers”, by taking the cover off his own soul, which is a mine of infinite knowledge. According to the Vedanta philosophy, knowledge is inherent in a human being, like a spark in a place of flint, and all that is needed is the strike of suggestion to bring out. ‘Manifestation’ indicates

spontaneous growth, provided the impediments, if any, are removed.

Next in importance in the Swami's definition of education is the 'expression already in man'. This refers to a human being's potential, which is the range of the abilities and talents, known or unknown that he is born with - 'potential' speaks of the possibility of awakening something that is lying dormant. **Israel Scheffler, in his book of 'Human potential', considers three aspects of this :**

- (a) the capacity to acquire a specific characteristic or to become someone who possesses it. For instance, we might say, 'Amal has the capacity to become a 'Maradona, the world famous soccer player'.
- (b) the propensity is an attribute which indicates what a person is likely to do when the opportunity comes and freedom of choice is available. It suggests something about a person's motivation. For example, Rabindranath Tagore's propensity, expressed in his "Gitanjali", indicates his strong aspiration to discover the wonder behind his creation; and
- (c) the capability means a person's motivation and efficiency in working towards an intended outcome. It refers to something more than a person's capacity to perform. Rather, it is a person's strength and capacity to get rid of obstacles to his learning such as lack of motivation or obstacles in his environment.

Thus, these three concepts - capacity, propensity and capability - emphasize the three aspects of education respectively :

- (i) That which makes learning possible;
- (ii) The development of Learning; and
- (iii) Self - development and self empowerment.

The word 'perfection' in the Swami's definition of education is also very significant. We can see that every act connected with learning, training, etc. is part of a process directed towards an end. The English word 'perfect' implies completion, or something being made whole. The Greek word 'teleics' is translated as 'perfect', and suggests the idea of attaining a goal or an end. Drawing on these meanings, one may conclude that perfection in educational parlance is the goal of actualizing the highest human potential.

#### **True Aim of Education :**

The object of the ideal system of education, then, should not merely be the advancement of theoretical knowledge but also the advancement of life, development of the highest powers and capacities, and the unfoldment of the noblest potentialist of the student. He must be enabled at the same time to apply intelligently to his own life all the ideas that he has learnt and gathered and thus promote his growth physically, intellectually, morally and spiritually.

Swami Vivekananda has tackled the problem in its entirety, unlike those who try to paint a decorate a hopelessly dilapidated building in their vain efforts to make it new, this grant architect has suggested that a glorious mansion should be built on a firmer foundation. That is why he observes :

Every improvement in India requires first of all an upheaval in religion. Before flooding the land with spiritual ideas, you attempt to get secular knowledge without religion, I tell you plainly, vain

is your attempt in India; it will never have a hold on the people. Education, he said, must provide “Life-building, man-making and character - making assimilation of ideas.”

### **Role of Religion :**

The question arises as to why religion should be associated with education. The answer is obvious and more so in India.

‘Each soul’, Swami Vivekananda declares, “is potentially divine, and the goal is to manifest this divine within. He defines religion as “the manifestation of the divinity already in man.” This self-realisation is possible only through education which is ‘the manifestation of perfection already in man’. The attainment of perfection brings out the divine nature. The goal of human existence is to manifest the perfection and divinity of the soul by removing the accretions and encrustations which have grown round what is taken to be the personality.

### **Growth of Personality :**

But, with reference to the education of the child, we are not concerned with this ultimate nature and goal. We are now interested mainly in the child as a human being, and in the course he is to follow for the evolution and growth of his personality. It is enough for our present purpose if we regard the student under our care as a self-conscious entity, dwelling in the physical body, having organs of sense perception and possessing the ‘inner - organ’ called the mind, with its faculties of intellect, feeling and will. These faculties are capable of being developed to the maximum tune of perfection. Associated with the mind, the self-conscious entity or spirit becomes a psychological being. Concerned with the physical body, the psychological being becomes an embodied being - a human personality. The true education means

an allround culture - physical, intellectual, moral and spiritual. A complete system of education can not disregard of these different aspects. It must take in to account the development of a healthy body, a proper control of self - impulses and instincts, the acquirement of knowledge, sublimation and proper direction of feeling and sentiment, development of the will and the sense of duty. The physical body is to be sustained by proper material food, the mind to be developed through the assimilation of the right type of ideas, and the soul, to be nourished by earnest prayer and meditation. A complete system of education, as has been stated, implies a balance and harmony between the properly developed body, mind and soul.

### **The need for Brahmacharya :**

During the period of studentship, the foundation of life is to be laid properly. The great stress must be given on the life of Brahmacharya. Swami Vivekananda observes : “The old institution of living with the Guru and such system of imparting education are needed. What we want are western science coupled with Vedanta, Brahmacharya and guiding motto, and Shraddha and also faith in oneself.”

Speaking of the power of continence, Sri Ramkrishna declares :

If a man practices absolute Brahmacharya for twelve years, the **medha nadi** (nerve of intelligence) will open, i.e. .... his power of understanding will become capable of penetrating and comprehending the subtlest ideas. With such an understanding man can realize God. God can be attained only through a purified understanding of this type.”

Chastity in thought, word, and deed, always in all conditions, constitute what is called Brahmacharya. In it the energy that expresses itself

as sexual energy, is transformed in to spiritual energy. As Swami Vivekananda observes :

“The human energy which is expressed as sex energy, in sexual thought, when checked and controlled, easily becomes changed in to *ojas*. It is only the chasteman and woman who can make *ojas*, and store it in the brain, that is why chastity has always been considered the highest virtue...

By the observance of strict Brahmacharya, all learning can be mastered in a very short time, one acquires unfailing memory of what one hears or knows but once. The chaste brain has tremendous energy and gigantic will-power.”

#### **Training the mind :**

Vivekananda concurred with contemporary thinkers when he asserted that the mind - the chief instrument of learning - deserves more attention than it had earlier received. Training the mind should be a students' highest priority, and not simple the accumulation, the memorising and the operating of facts. Learning to concentrate the mind was the focus in the Swami's scheme. He said :

"To me the very essence of education is concentration of mind, not the collecting of facts." The students train the mind to be more attentive and more 'mindful'.

Swami also wanted students to cultivate will-power. According to him, will-power is developed, when the current and expression of will are brought under control and become fruitful. Therefore, will-power is necessary to strengthen one's character.

#### **Culture and Education - The Teacher and the Pupil :**

Vivekananda says : “It is culture that withstands shocks, not a simple mass of knowledge ... knowledge is only skin - deep, as civilization is, and a little scratch brings out the old savage.”

A society is for ever adding to its learning and culture. According to T.S. Eliot, education was but a manifestation of culture. He said, “The purpose of education, it seems, is to transmit culture, so culture is likely to be limited to what can be transmitted by education.”

As Vivekananda said : “The only true teacher is he who can immediately come down to the level of the student, and transfer his soul to the student's soul and see through the student's eyes and hear through his ears and understand through his mind. Such a teacher can really teach and none else.”

Discussing the practical implication of morality, Swami Vivekananda once observed :

What is meant by morality ? Making the subject strong by attaining it to the absolute, so that finite nature ceases have control over us.

Character - building is fundamental in Vivekananda's educational scheme, as against career - orientation, which occupies centre - stage in today's education. A person is what his thoughts have made him. Explaining this Swami said, each thought is a little hammer blow on the lump of iron which our bodies are, manufacturing out of it what we want it to be. That is why one finds that the focus of Swami's educational thoughts was on assimilation of man-making, character - building ideas.

The present system of education has over emphasized the cultivation of the intellect, at the cost of the general well being of the humanity. To check this dangerous trend Vivekananda expected that the educational system should be suitably designed to produce such wholesome human beings. Interestingly, the UNESCO report 'Learning to be' published in 1972, while defining the aim of education, echoed this same idea. It reads: "The physical, the intellectual, emotional and ethical integration of the individual into a complete man is a broad definition of the fundamental aim of education."

#### **Conclusion :**

The right to education for everyone, guaranteed by the Constitution of India, was Vivekananda's dream, but it is still a far cry from its goal. His idea of continual or life long education however, has been adopted in many countries already. Moreover, because of the adoption of continuous education in the countries, our idea of what constitute success and failure has altered, raising new hope for the weak, unprivileged section of these societies - the very people who for various reasons can not complete their education when they are young Vivekananda's cry for the uplift of the down-trodden masses, particularly of the long - neglected women, has evoked favourable response from different quarters, but societies tailor education to meet their own needs, thereby often robbing the weak of their freedom to determine their own destiny. Unless radical changes are made in all societies

the poor will never be able to raise themselves. The lack of basic necessities among unprivileged all over the world is no less striking than the lack of morality among the educated privileged one's. To squarely meet this great challenge, Vivekananda prescribed man-making and character-building education.

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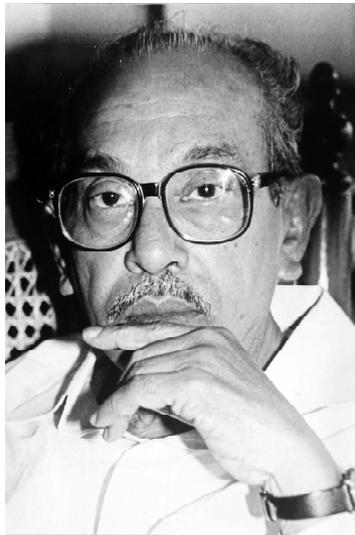
## Bakshipatra : A Born Rebel

*Bhaskar Parichha*

Harish Chandra Bakshipatra is remembered as a tough leader, a wholesome personality and a born rebel. 'Harish' as he was known among his friends, collaborators and all alike was an uncompromising leader and an able administrator.

Born in a far-flung place like Rayagada on November 17, 1933; Harish Chandra Bakshipatra catapulting into a state-wide leader was not a short-cut, neither did he become the man of the masses via manipulative tactics as the present-day leaders adopt with such ease! Rebelliousness was his forte and he left no stone unturned to accomplish anything if that meant for the state and the people. 'Fight and don't fret' was the *mantra* he gave unto himself and others who mattered in his long career as a base leader spanning four long decades.

Whether it is the ryotwari system in Koraput or the struggle for the unification of outlying areas of Sadhaikala and Kharasuan; whether keeping alive the Utkal Sammilani and its cherished ideas or raising a voice against the dominance of Telugus in southern districts of Odisha, Harish Chandra



Bakshipatra had been overt in his approach and he espoused these causes in all their ramifications.

Harish Chandra Bakshipatra was a born leader. From becoming the student union vice-president for the first time in 1952 when he was studying in SKCG College, Paralakhemundi till grabbing the student union presidentship of MS Law College, Cuttack in 1961, his leadership qualities were only up-and-coming.

But it was in 1955 that he established himself as a leader of considerable worth when he took up relief and rehabilitation work during the grave floods in Jagatsinghpur and the consequent breach of the 'Dalei' embankment.

The next year was even more eventful - the onset of border struggle which gave rise to the famous student agitation. Indeed, student politics was his strong point and no contemporary leader had earned so much fame and recognition that he had received.

Harish Bakshipatra's political career began with his election to the Odisha Legislative Assembly in 1974 on a Utkal Congress ticket

and he was instantly anointed as the Chief Whip of the Opposition. This was the most turbulent year of politics in Odisha as well as the country. Declaration of 'emergency' by Indira Gandhi in 1975 resulted in the arrest of all opposition leaders. Being an active member of the JP struggle, Bakshipatra spent those nineteen months in Bolangir, Bhawanipatna and Koraput jails. His second stint as MLA, Koraput on a Janata Party ticket was followed by his becoming a cabinet minister in Nilamani Routray's government.

As Minister of Industry, Mining & Geology, Rural Development, Tourism & Culture, Bakshipatra initiated several novel schemes and programmes. The District Industry Centres (DICs) were set up during his tenure. Having realized the paucity of public transport to backward districts like the undivided Koraput, Phulbani several routes were opened up which witnessed heavy plying of government buses.

Bakshipatra's administrative acumen, his understanding of the working of the government and his opposition to anti-people policies even while in government brought him laurels. His popularity as a leader even when out of power could be gauged from the fact that he devoted much of his time during the eighties in the cause of the poor, the working class and the daily wage labourers.

With Biju Patnaik returning to power in 1990 after a gap of almost three long decades, Bakshipatra too was back in the Biju's Cabinet with such portfolios as Forest & Environment, Commerce & Transport. Besides successfully steering the departments, he had opposed several policies and decisions of the government of which

he himself was a member. Legend has it that Chief Minister Biju Patnaik not only valued Bakshipatra's arguments but was even apprehensive of a reproach.

The year 1994 saw Harish Bakshipatra taking up the causes of separated Odia-speaking people both within and outside Odisha, once more. The session of Utkal Sammilani in Rayagada in the same year is still remembered for its congregation and the renewed objective of unifying Odia-speaking people. He continued with this struggle right up to the formation of Jharkhand state in 2000 AD.

A person with great self-esteem, a nationalist to the core, an uncompromising leader, Harish Chandra Bakshipatra stood for the poor and the deprived. If social equity was his intent, he endeavoured to arm the backward people with all their rights. Because of his legal background, he could accomplish this with great elan.

The struggle was his strong suit and he continued with the legitimate battles till he breathed his last on October 27th, 2000. Harish Bakshipatra's whole life was devoted to the upliftment of the Odias and his heart cried forever and a day for the sake of the state and its people. He was a great statesman with enormous human qualities – no less a 'bhomiputra' in the true sense of the term.

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## History of Cuttack City

*Dr. Sudarsan Pradhan*

The word Cuttack is an anglicized form of the Sanskrit word **KATAKA** that assumes two different meanings namely “military camp” and secondly, the capital fort of the Government protected by the army. Cuttack is one of the oldest cities of India and was the capital of Odisha for almost nine centuries. It is situated at the separation of the Mahanadi and its main branch the Kathajodi. The city located in latitude, north 20°29’ and longitude East, 85°50’ and spread across an area of nearly 74 square miles. The Cuttack city stretches from Phulnakhara across the Kathajodi in the south to Choudwar in the north across the Birupa River, while in the east it begins at Kandarpur and runs west as far as Naraj Barrage. The main city is located at the apex of the Mahanadi river delta. Four rivers including Mahanadi and its distributaries like Kathajodi, Kuakhai, and Birupa run through the city.

The recent growth of the city has resulted in expansion across the Kathajodi River and a new township towards the head of the delta formed between the tributary Kathajodi River and the main river Mahanadi has come up by the name of C.D.A which is spread across 2000 acres land. It has all total 15 sectors out of which 11 are residential areas and has population around more than three lakhs. Jagatpur and Mahanadi Vihar

are the two other townships in the city. Mahanadi Vihar is the first satellite city project in Odisha. Cuttack an unplanned city is characterized by a maze of streets, lanes and by-lanes which has given it the nick name of a city with Baban Bazar, Tepan Galee and i.e.52 markets and 53 streets. The city experiences a tropical wet and dry climate. Due to the closeness to the coast, the city is prone to cyclones from the Bay of Bengal. The word “**KATAKA**” etymologically means army cantonment and also capital city. The history of Cuttack amply justifies its name. It started as a military cantonment because of its impregnable situation and later on developed to be the capital of the state of Odisha.

From the remote past Cuttack served as the only narrow strip for the land route through the country and as such people coming from north to south or from south to north had no other alternative route than to cross the Mahanadi at or near Cuttack. The river Mahanadi was the best convenient water ways for trade-commerce and communication with the hinterland. Cuttack was well connected with the ancient and medieval Orissa sea ports like Che-li-ta-lo, Palur, Dantapora and Tamralipti etc both by the land and Sea routes. The Cuttack city flourished as an important centre for trade and commerce in the

ancient time. It also served as the gateway for the spread of Indian culture specifically in the South-Asian countries.

The Political importance of Cuttack city was not exactly known before 8<sup>th</sup> century. Historical evidences are absolutely lacking as to the foundation of Cuttack city. Madalapanji and the Jagannath temple chronicle provide some idea on this issue, but its accounts are based on tradition rather than historical facts. Stirling had to rely upon this doubtful authority while writing the accounts of Cuttack city as early in 1822. He thus mentioned, “Raja Nrupa Kesari, a martial and ambitious prince who was always fighting with his neighbours is said to have first built a city on the sites of the modern Cuttack about 989 A.D. The reign of Markat Kesari was famous for the construction of an embankment to protect the new capital from inundation in 1006 A.D. For the confirmation of his statement, he also states that –authority vary as to the date of the foundation of Cuttack Varanasi, but there seems good reason to think that it became a capital city as early as the end of the 10<sup>th</sup> century, during the reign of Kesari Princes.

The early history of Cuttack is connected with the history of the Kesari dynasty of Odisha. Choudwar, located to the north of Cuttack city on the left bank of the Virupa river was one of the seats of early Kesari rulers, who are also known to us as Somavamsi kings. The Copper Plates issued by Kesari Kings attests that, Choudwar was the early seats of authority of Kesari kings. Mahabhavagupta Janmejaya of Kesari dynasty issued three copper plate charters from a place named Cataka, which has been identified by Pandit Binayak Mishra and Dr. Harekrushna Mishra with modern Choudwar. If this

identification is taken to be correct, this Janmejaya should be recognised as the founder of the town of Choudwar Kataka or Cuttack.

The importance of Cuttack increased after the occupation of Odisha by Chodagangadeva, early in the 12<sup>th</sup> century. In the year 1230 A.D, Anangabhimadeva-III transferred his capital from Kalinganagar to Abhinava Varanasi Cuttack(Cuttack) on the bank of the river Mahanadi which was the most suitable and centrally situated place of his empire. Earlier, Chodagangadeva had constructed Sarangagarh on the right bank of Kathajodi another centre of political activities of the Ganga Empire. Stirling points out that “tradition also ascribes to Chodagangadeva (Churanga or Saranga Dev) the builder of the forts and palaces both at Sarangagarh and Cuttack-Choudwar.

The Nagari record confirmed the evidence of Madalapanji regarding the transfer of capital from Choudwar to Varanasi Kataka. Its other accounts mentioned that the foundation of Cuttack by Nrupa Kesari in between the Mahanadi and Kathajodi and building of protective revetment by Markat Kesari long before Anangabhimadeva cannot be accepted as authentic, so long as confirmative evidence in the form of copper plate is not discovered. The very fact that Anangabhimadeva-III founded the Abhinava Bidanasi Cuttack (Bidanasi) on the south bank of the Mahanadi sometimes during the period from 1211 A.D to 1230 A.D. dismisses any other possibility of its having been founded by Nrupa Kesari. There is also nothing to show in favour of the fact that the stone revetment of Kathajodi was constructed as early as the Kesari Period. The revetment which runs in horse-shoe pattern starting on the left bank of the Kathajodi

from near Khannagar area and stretching west wall up to the Chahataghat of the Mahanadi. Then, the revetment extended on the right bank of the Mahanadi as far as the Jobra Ghat clearly indicates that it was constructed at the bifurcation of the Kathajodi from the Mahanadi and that this bifurcation at the time of the construction of this revetment was not far away from the Chahataghat. Since the time of construction of this revetment the Kathajodi appears to have receded as far as the rock of Naraj.

After the end of Ganga rule Odisha passed in to hands of Gajapati Kings belonging to the solar dynasty, under which Varanasi Cuttack continued to be the capital of Odisha. Kapilendra Deva (1435-1467 A.D) the founder of this dynasty was a great empire-builder and he extended the empire of Odisha from the Ganges in the north to the Kaveri in the south. Purusottam Deva (1467-1497 A.D) the youngest son and successor of Kapilendra Deva lost for some time the southern portion of his empire comprising the kingdom of Vijaynagar Kingdom but later on he managed to recapture all of his southern territories. The image of Krishna known as Sakhigopal was brought by him from Kanchi among many other trophies of war and it was installed at Varanasi Kataka.

After the death of Prataprudra Deva, his general Govinda Vidyadhar of Bhoi dynasty usurped the throne at Varanasi Kataka. He murdered two sons of Prataprudra Deva and appointed Danardan Vidyadhar as the Chief Minister and Mukunda Harichandan as the Governor of Kataka. Govinda Vidyadhar invaded Golkonda to recapture the lost territories of southern parts of his empire. But during his absence Raghu Bhanja Chotray of Mayurbhanja

started rebellion and occupied Varanasi Kataka which was strongly defended by the Governor Mukunda Harichandan. This incident enforced Govinda Vidyadhar to left the plan of conquering Golkonda and retreated Varanasi Kataka to encounter the rebel Raghubhanja. Govinda Vidyadhar died on the bank of the Vaitarani at Dasasvamedhaghat of Jajpur.

Mukunda Harichandan usurped the throne of Varanasi Kataka in the year 1560 A.D and ruled up to 1568. Meanwhile, Sulaiman Karani the Afghan Sultan of Bengal made plan to occupy Odisha. The Moghul emperor Akbar had formed alliance with Mukunda Deva and prepared a plan to attack Bengal. When Akbar was busy in his Chitore campaign, Sulaiman sent a vast army under his son Bayazid against Odisha. The Muslim army proceeded up to Varanasi Kataka and captured Barabati fort. In the midst of this disaster Ram Chandra Bhanja, the Commander of Sarangagarh revolted against Mukunda Deva and declared himself as the King of Odisha. Thereafter, Ramachandra Bhanja was defeated and killed by Bayazid and thus Odisha passed in to the hands of Bengal in the year 1568 A.D.

The Afghans of Bengal were ousted by the imperial Moghul power. Daud, the son and successor of Sulaiman Karani was finally killed in a battle near Rajmahal and Bengal and Odisha were annexed to Akbar's empire in 1590 A.D. Finally, Raja Mansingh conquered Odisha and brought it under Moghul Empire permanently in the year 1592 A.D. With the assistance of Todarmalla, Rajamanasingh introduced settlement system in the province. The records of Ain-I-Akbari of Abul Fazal clearly indicates, during the Moghul rule Odisha was included in the Subah of Bengal and it consisted of five

Sarkars named Jaleswar, Bhadrak, Cuttack, Kalinga Dandapat and Rajmahendri. Kataka continued to be the capital of Moghul Odisha. Abul Fazal also mentioned that Moghul Governor was residing in the Kataka city, which had “a stone fort of great strength and a masonry palace within.”

Juma Masjid situated very close to the Lalbag palace was built by Zaibun Nisa Khanum, the Shahzada Begum wife of Ekrom Khan the then Governor of Kataka and Aurangzeb in the year 1690. This Masjid is located at Balubazaar area of Kataka. An important monument known as Kadam Rasul was built at Kataka in the year 1715 A.D during the reign of Shah Alam Badshah. It is believed to have contained the footprint of the Prophet, Commissioned from Mecca by one Suja-Uddin Mahammad Khan.

When Aurangzeb died in 1707, Murshid Quli Jafar Khan declared himself as an independent Nazim of Bengal and appointed his son-in-law Suja Uddin as Naib Nazim of Odisha at Kataka. Suja Uddin was an able and enlightened administrator. After the death of Murshid Quli Khan in 1727, he was succeeded by Suja Uddin as the Nazim of Bengal, and appointed his illegitimate son Mahammad Taqi Khan as the Naib Nazim of Odisha. Mahammad Taqi Khan was very unpopular and oppressive Governor of Kataka. He imprisoned Ramachandra Deva-II, the Raja of Khurdha and forced him to embrace Islam, who was then renamed as Hafiz Quadr. He broke down large number of cult images and desecrated and plundered Jagannath temple at Puri. The Temple Servitors managed to remove the triple images of Jagannath to an Island in the Chilika Lake. Taqi Khan however did not survive long and died a mysterious death in 1734 A.D.

After Taqi Khan, Murshid Quli Khan –II the son-in-law of Suja Uddin became the Naib Nazim of Odisha and attempted to win back the goodwill of the people. He also helped the local Chief Dandadeva to reinstall the images of Jagannath in the temple. Suja Uddin died in 1739 A.D and succeeded by his son Sar Faraz Khan, who was soon defeated and killed at Giria by Alivardi Khan, the Naib Nazim of Bihar. The Moghul Emperor Mahammad Shah recognises Alivardi Khan as the Nazim of Bengal, Bihar and Odisha. After acquiring Bengal, Alivardi Khan invaded Odisha to chastise Murshid Quli-II, who had challenged his authority and the latter was defeated and took shelter at Musalipatnam. The Zamindars and Generals of Odisha surrendered to Alivardi Khan.

The Repeated Maratha incursions considerably undermined the power of Alivardi Khan and exhausted his treasury. By 1747, Odisha practically came under the occupation of the Marathas and when taking opportunity of weakness of the Nazim, the Afghan chiefs of Bihar raised the standard of rebellion. Alivardi was forced to conclude a treaty with the Bhonsola in 1751 A.D. He agreed to pay yearly twelve lakhs of rupees as Chauth, and ceded the revenues of province of Kataka to the South of the river Suvarnarekha to Bhonsola Raja.

The Barabati fort was improved by the Marathas. The Marathas also took steps to beautify Kataka by building some temples and Maths. The Amareswar temple in Buxibazaar and the Mastaram Math at Shaikhbazaar were the finest examples of such works of the Marathas built in Kataka.

During the rule of Marathas Kataka greatly prospered, as an emporium of trade and

it became the central market of exchange between the Marathas of Nagpur territory and the English merchants in Bengal and Northern Sircars. The Marathas not only extended Kataka town but also built their military camp in the Chauliaganj area for commanding high roads passing towards north and the south. The Maratha Military camp at Chauliaganj area visited by Mr. Motte during his stay at Kataka. On 1<sup>st</sup> May 1633, a small party of English merchants under the command of Cartwright reached at Kataka from Musalipatnam via Haripur and stayed there up to 9<sup>th</sup> May 1633. During the Second Maratha War, the conquest of Odisha by the English was practically achieved on the afternoon of the 14<sup>th</sup> October 1803, when the fort of Barabati was occupied by the Lieutenant Colonel Clayton. The treaty of Deogaon on 17<sup>th</sup> December, 1803 confirmed the legal recognition of British conquest over Odisha.

After the British occupation of Odisha, the British authorities temporarily appointed Colonel Harcourt and Melville as special commissioners who were stationed at Cuttack. James Hunter who was appointed as the acting Collector was stationed at Puri. From 1816, onwards Cuttack remained the headquarters of Odisha all through the British rule. In the nineteenth century the public and administrative life of Cuttack was dominated by the Englishmen and Bengalies. While the English held high rank civil and military post, the subordinate posts in the bureaucracy were held by Bengalies. About the position of Odias in the bureaucracy the Magistrate of Cuttack observed in 1821 “scarcely a single real Odia receives a salary more than Rs.10/-per month.”

Due to frequent short term settlements many rich and reputed Odia families lost their lands

which were bought by the Bengalies speculators at low prices. The Bengalies dominated the bureaucracy as well as the public life as lawyers, doctors, and socio-religious reformers. They became domiciled in Odisha and some of them played significant roles in the public life. The number of English officials in the State within hundred and practically had no interaction with the local people. But a few of the English Officers like T.E.Ravenshaw and John Beams were quite popular among the Odia people. The European missionaries had interaction with the local people only because the nature of their work. They introduced press and modern education system and made significant contribution to the growth of Public life in Cuttack town as well as in Odisha.

Cuttack was the headquarters of the Baptist and Roman Catholic Missionaries in Odisha. The Baptist missionaries started their activities in Cuttack in 1822 and Roman Catholic missionaries started in 1845. In 1823, the Baptist missionaries established an Anglo-vernacular school at Cuttack. This was the first English school at Cuttack. In 1837, the Baptist missionary started the first printing press of Odisha known as the Cuttack Mission Press. The Cuttack Mission Press published the earliest journals of Odisha such as Jnanaruna (1849), Probodh Chandrika (1856), and Arunoday (1861).

Rice trade developed at Cuttack during the British period. The Maratha merchant's did not supply rice to Cuttack so that the Government took steps to foster rice trade at Cuttack. To be more specific, Chauliaganj locality was more famous for so many large rice warehouses. Beams noted Cuttack and Balasore rice merchants export huge quantities of rice to Madras.

After the great famine of 1866, the British Government gave serious consideration to remove the isolation of Cuttack from the rest of the world and at the same time to prevent the recurrence of such calamities in future. The Taladanda Canal, the Kendrapara Canal, Machhagaon Canal, the Gobari and Pattamundai Canals were all constituted by the East India Irrigation Company as early as 1862. In the river Mahanadi three separate Weirs were built which are known as the Naraj, Mahanadi and Birupa Weirs. The Weir was built at Jobra which supplied water to the Taladanda Canal and its branch the Machhagaon Canal. A Canal workshop was built at Jobra.

Road lines were also opened up during the later part of the 19<sup>th</sup> century. Jagannath Trunk Road which runs from Midnapore to Ganjam via Cuttack, the Cuttack-Sambalpur road, the Cuttack-Chandabali Road via Kendrapara. The Railway line of the Bengal-Nagpur Railway (B.N.R) was constructed through the coastal region of Odisha as it connects Cuttack directly with Chennai and Kolkata and provides vast opportunities for trade and commerce.

The Post famine period witnessed the development and growth of modern education in Cuttack as well as in Odisha. In the year 1841, the first Government English School was set up in Cuttack and it slowly progressed as the High English School of Cuttack until the great famine of 1866. After the famine, the then Commissioner T.E.Ravenshaw offered sympathetic attention to this educational institution. That School was converted in to a College with Intermediate teaching in 1868. Ten years after that, it was raised to a first grade college with Degree classes and it was named after Ravenshaw. The Maharaj of Mayurbhanj, Krishna Chandra Bhanja Deo donated rupees twenty thousand towards the

maintenance of the College to which Law department was subsequently added in 1881 A.D. The Odisha Medical College was established in 1875 following the establishment the Cuttack General Hospital in 1874.

The Cuttack Municipality was formed in 1876 with total 30 members out of whom 24 members selected, 4 Ex-officio and remaining 2 nominated by the Government. The Municipal Board took charge of lighting the town, supplying drinking water facilities, medical relief and public instruction at primary level.

The City remained as the administrative and commercial headquarters of Odisha until 1948. The State Government has selected Bhubaneswar as the State Capital situated at the distance of 25 kilometres from main Cuttack in accordance with a plan of Greater Cuttack. The man behind this master plan was Dr. Harekrushna Mahtab, the then Chief Minister of Odisha. The Commercial importance of Cuttack still continues unabated as it provides the only outlet for its rich hinterland namely the Eastern ex-feudatory states and the coastal area of district.

The Cuttack city is well known all over the country for its beautiful and delicate filigree works. The Barabati stadium was constructed in the famous Kila maidan near the Barabati fort. Jawaharlal Nehru Indoor Stadium was built in the ramparts of Barabati fort. The High Court building is another impressive structure in the city.

Last but not the least, unless the beautiful revetments constructed along the banks of the river Mahanadi and Kathajodi about a thousand year ago by Markat Kesari (according to tradition and Madalapanji) Kataka would have long ago been washed away by the devastating flood of

these two rivers. It is true that, the successive Governments like the Mughuls, Marathas, and the British have kept the embankments under repairs, but the stately palace of Malcandy, which surprised Abul-fazal, Bruton and La Motte is no more. The nine storied palace and the fort walls have been destroyed by the British administrators.

The general look of the city has deteriorated because of encroachment in to roads and lack of proper sanitation. The most vital and acute problem of Cuttack city are the existing drainage pattern and poor traffic system. Cuttack city has no proper road pattern at-all. Whatever road does exist is so narrow that they cannot cope up even with the present traffic load. Traffic on the main road connecting the railway station to the heart of the city has already crossed its limits. Cuttack is an old city; it is mostly an over-grown village. The problem has further been accentuated as those old villages have remained as they were and hence they are the present day worst slums in the city of Cuttack.

Thus Cuttack is as at it were a bridge linkage together the past, present, and future of Odisha. Its root goes deep to the hoary past, but unlike many of the old cities, it is not in decay of ruins. It is pulsating with a new life, and one can reasonably hope that with its increasing importance and under the fostering care of its people and the Government it will develop in to one of the most attractive city on the eastern coast of India.

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## Ancient Ports in Odisha : A Historical Review

*Dr. Mohammed Yamin*

Indeed, Indian peninsula during ancient period was the cradle land of a rich culture and civilization. This land was encircled by the blue water of Indian Ocean in the South and gigantic Himalayas mountain in the North. Since time immemorial glorious Indian culture touched its neighbour particularly South-east Asian countries. The current of cultural intercourse led to the implanting of age-old Indian culture and civilization in the World over and South-east Asia also. <sup>(1)</sup> Mythological study of ancient India shows that India had colonized culturally the entire globe. Ashok, the Mouryan emperor in third century CE sent his missionaries' Sona and Uttara to Subarnabhumi to evangelize the doctrine of *Dhamma*. <sup>(2)</sup> Maritime trade of India in the Far-east is corroborated by the Buddhist *Jataka* and *Kathasarita Sagara* which elaborated the frequent voyages of Indian trader to Subarnabhumi. R.C. Majumdar referred that Islam was introduced by Indian traders in Bali, Java and Sumatra. The penetration of Islam into the Far-east was gradual and peaceful <sup>(3)</sup>.

Odisha situated on the shore of the Bay of Bengal had trade relation with overseas from ancient period <sup>(4)</sup>. Since ancient period, Odisha had its reputation as a sea-faring state. In its splendid ancient time, the ships of Kalinga had

played the significant role to establish colonies in the Indian Archipelagos. It is said that the people of Odisha were the explorer in colonizing the remote domain of Bali, Sumatra, Java, Burma, Siam and many other places <sup>(5)</sup>. P.P. Mishra<sup>(6)</sup> is of the view that, "as far as Odisha's contact with South-east Asia is concerned, its geographical location the Bay of Bengal provided scope for maritime trade with this region. Odisha had flourishing ports like Tamralipti, Palura, Chelitalo etc. providing excellent sea-routes for external trade. Its people were expert in maritime activities and the art of navigation was in the curriculum of Kalingan princes".

Odisha's trade contact with South-east Asia can be traced back to the Neolithic period. It is argued that shouldered adzes were brought from South-east Asia through land routes via North-eastern India <sup>(7)</sup>. Archaeological excavation at different places like *Kuchai* and *Sulabhdih* in Odisha, *Chirand* and *Senuver* in Bihar, Koldhima in U.P. etc, had highlighted the associations with similar Neolithic sites in Myanmar and Thailand. The findings at *Sulabhdih* in present Sundargarh district of Odisha had produced carve resembling with shouldered pick-adzes of South-east Asia. These archaeological findings reveal the Odishan cultural

and maritime trade contact with the entire globe since ancient period.

Odishan maritime trade with other parts of globe brought a vast wealth. The glories of Odisha in ancient time were perhaps due to its maritime trade. It is true that, so long as the Hindu Kingdom of Odisha was independent and the Hindu Kings provided incentive and extended imperial support, the maritime trade was blooming and significantly added to the national wealth. With the occupation of Odisha by the Muslim rulers in the year 1568 CE. some significant changes were experienced in the maritime sector. The lacklustre imperial support with apathetic nature of the Muslim rulers to the economic prosperity and their long absence from the Odishan headquarters because of their pre-occupation in Bengal, presented an indifference atmosphere in the maritime trade of Odisha.

### Ports of Odisha

The coast of Odisha studded with a number of ports and ports town which are not only referred in the text but also substantiated by archaeological excavation and explorations. Ports were required for overseas trade and commerce and attracted the attention of the sea-farer. Odishan ports were developed at the strategic points and served as the medium of export of articles and cultural intercourse. In fact, the maritime trade in Odisha was established through a number of ports, since ports played the vital role for the sea-voyages the coastline of Odisha was spotted with several sea ports, few of them were natural one. Some of which are now difficult to identify<sup>(8)</sup>. The ports were life-line of the people of Odisha in trade and commerce. It served as the medium of export and import. There were many ancient ports referred by historian

which played the crucial role for emergence of prosperous maritime contact between Odisha and foreign countries. Some of the important ancient ports are highlighted as thus:

### Tamralipti

Tamralipti was the most important port of the entire east coast of India situated at the Odishan coast. It was the significant sea ports of India which was connected both by land and river within India and foreign countries. During ancient period, Odisha had established maritime trade with foreign countries. From this port there was a regular sailing of vessels which proceeded along the coast of Bengal and Burma and made direct voyages to the Malaya Peninsula and to the East-Indies and Indo-China and beyond. It was the gateway of the daring sailors and missionaries. Ships laden with cloth, silk and copper exported to far-off countries like Ceylon and coast of Arabian sea. In order to control this port may be one of the reasons of Ashok to attack Odisha.<sup>(9)</sup>

Modern identification of Tamralipti is Tamluk in Midnapur district of West Bengal<sup>(10)</sup>, which was within Odishan empire till recent past. It was located at the confluence of the river Rupanarayana and the Bay of Bengal i.e, Lat..22" 17' N and long.87" 57'E. The present name Tamluk is believed to have derived from the name Tamalika.<sup>(11)</sup>

### Che-li-ta-lo

Hiuen-Tsang the Chinese traveller who visited India in 7<sup>th</sup> CE. had accounted following description on his travelogue about the Che-li-ta-lo port that it was in the Wu-ta (Odra) country. That it was near the shore of the Ocean in the South-east of the kingdom that the town was

above 20 li (5 miles) in circuit. It contains many rare stone. Beautiful Buddhist monasteries were also traced there <sup>(12)</sup>. To draw out the identification of Che-li-ta-lo, many historians had underlined different places for its identification but somehow, Manikpatna has been resembled to the identification of the port Che-li-ta-lo, which logically proved so far. Manikpatna was an important port, urban and trading centre for merchants situated on the bank of water connected the lake of Chilika with the Bay of Bengal. Discovery of Puri-Kushan coins from the vicinity of this port gives ancient garb.<sup>(13)</sup>

### Palur

Palur was one of the flourishing sea ports of ancient Odisha <sup>(14)</sup>. The earliest reference of Palur port appears in the Ptolemy's *Geography* during 2<sup>nd</sup> century CE. <sup>(15)</sup> who has named it as Paloura. Nagarjunikonda inscription of third century CE of Virupurushadatta (14<sup>th</sup> Regnal year) says it was an important maritime emporium.<sup>(16)</sup> Buddhist *Jatakas* identified Palur as Dantapur.<sup>(17)</sup> With these uncertainty the identification of the Palur is yet to be ascertained.

### Sonapur

It was an important sea port of ancient Odisha on the sea-coast of Ganjam district where Bahuda river enters into the Bay of Bengal, 20 km away from present Berhampur city. <sup>(18)</sup> Subsequently Bahuda river formed sands which create obstruction to shipping for which the port lost its importance. One point of time it was an important shipping centre for the sailors.

### Barua

Another important port of ancient Odisha was Barua or Barwah on the sea-coast about 33

miles south of present Berhampur city of southern Odisha. Now it is in Andhra Pradesh, 6 km from Sompeta and about 15 miles to the east of the Mahendra Mountain. The river Mahendratana which originates from Mahendragiri flowing to the east falls in the Bay of Bengal near Barua.<sup>(19)</sup>

Some of the other significant ports flourished in Odisha other than the above may be mentioned. The ports like, Pithunda, Dosarene, Kalingapatnam and Khalkattapatna were flourished in ancient period to establish maritime trade contact with abroad. Through excavation some of them have been discovered while many of them are still awaiting the findings which may further glorify our maritime heritage.

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# Revival of Millet as Nutraceutical

(A Success Story of omm in Tribal Hinterland)

*Dr. Saroj Kumar Dash*

**"Annat Bhabati Bhutani, Parjanya Ann Sambhaba"**

*Verses 14 / Chapter – III of the Geeta*

It is un-debatable and undoubted fact that 'Food' is one of the basic needs of life and its sustenance. 'Rain' is the prerequisite for its growth, which has become unpredictable due to 'Climatic Change' which is a global phenomenon today with its multifaceted fatal consequences. Rising population resulting growing demand for and scarcity of food have made all concerned to toil tirelessly to come up with suitable solutions, giving rise to origin of new practicable outcomes and innovations of improved tools and better technologies, bringing revolutionary changes in the arena of 'Agro- Economy' in agro based country like India to fight out Malnutrition and to maintain a desired Socio-economy standard. The need and significance of Green Revolution of (1968) Pioneered by (M.S.Swamynathan), White–Revolution of (1970) fathered by Dr. V. Kurien in the development of Dairy & Dairy products, Blue Revolution of Mid-sixties popularly known as NEEL- KRANTY in Fishery and Aquaculture, Silver-Revolution during the tenure of Late Prime Minister, Indira Gandhi focusing on poultry sector and recently, Yellow Revolution visioned by Dr.

Sam Pitroda in Oil-Sector are many such innovative ideas associated with countrywide mega programmes which not only catered to the need of the time, but also unveiled the immense innate potency of the field chosen, creating new horizons of developments, in the developing country like that of ours. Being a welfare state still we are lagging behind provisions made under the National Food Security Act (NFSA-1913) and the target set in the (Article-37) of directive principles of state policy of our Constitution, which is also another deplorable fact.

## **Millet:**

Known as Mandia in Odia and Ragi in Hindi millet is an ancient and perhaps the first ever domesticated tropical crop (of POACEAE Grass Family), having tiny edible seeds in various colours, viz. creamy white, yellow, brown, purple and red grown around the world (i.e. Asia-Pacific, Western Europe, entire Africa, some areas of Australia and Latin American Countries and consumed for twin purposes (i.e. food and forage). Out of around 600 types the most commercial ones are **Pearl Millet, Proso Millet, Finger Millet & Fox-Tail Millet** cultivated in 21 states of India, which is the single largest country of its production. Once known as the

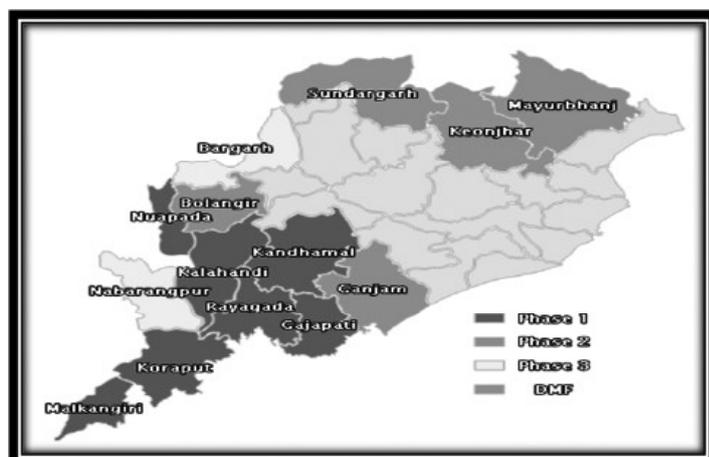
Coarse Cereal has been renamed as NUTRACITAL\*\* by the Govt. in historic meet of National Mission on Nutri Cereals at Pune on 18<sup>th</sup> Sept.2018 ( Later known as National Year of Millet) when the mega campaign was launched on a mission mode with the following 5 pronged objectives for,

- 1) **INCREASING** the consumption (both in the rural and urban areas),
- 2) **SETTING UP** decentralized processing units (in Panchayats/Blocks),
- 3) **IMPROVING** productivity by adopting better agronomic practices,
- 4) **LINKING** with better marketing network (for better price realization and
- 5) **INCLUSION** of Millet in SNP (State Nutritional Programme e.g. MDM of Schools, ICDS and PDS for its sustainability.

The chief architects of **Odisha Millet Mission (OMM)** are the Department of Agriculture & Farmer's Empowerment, Planning & Convergence Department, Experts, Civil Societies like WASSAN (Watershed Support

Services and Activities Network) as programme Secretariat & Academia like NCDS (Nabakrushna Choudhury Centre for Development Studies) in close consultancy with leading NGO's as experienced facilitators, entrepreneurs and prospective farmers representing the stake holders, who worked hand in hand from its very genesis, for this special programme of millet production in tribal areas, to assure nutritional security and address the climate resilience. The 5-T techniques of Hon'ble Chief Minister, Odisha, Mr. Naveen Patnaik, viz.

- 1) **"Technology, 2) Transparency, 3) Time, 4) Teamwork and 5) Transformation"** are all put into practice through inter departmental committees at Secretariat and Directorate level and level for a true translation of the basic ideas into practice, providing all the following requirements.
  - 1) Technical Support by ATMA (Agricultural Technology Management Agency) as the district nodal body,
  - 2) **Financial Support** at the rate of Rs.5,000/ per/Ha to small and medium farmers and Rs.2,500/per Ha for big farmers,



**Figure 1**

Odisha Map showing 3 Phases of Millet Mission Programme under operation

- 3) **Marketing Support** by extending minimum support price of Rs.40 per Kg and huge allocation of fund that is of Rs.100 Crore for local procurement through **TDCC (Tribal Development Cooperative Corporation)** and immediate transfer of the funds through IT Systems. Doing all these by a series of planned activities like sensitization through local level experienced NGOs for day to day work execution in addition to organizing rallies, food festivals, competitions in rural and urban areas so as to change the mindset of the people having a target of 1 lakh quintal production this year. For smooth implementation of this programme 28 Blocks of 7 Districts were chosen in 1<sup>st</sup> phase and later on it was extended to 72 Blocks in 14 Districts in 2<sup>nd</sup> phase and rest possible areas will be put in 3<sup>rd</sup> phase, covering 5 lakh farmers as beneficiaries of the state as shown in the **Figure 1**.
- Question may arise, why Millet being the sixth ranking crop after Wheat, Rice, Maize, Sorghum and Bajra cultivation is chosen for this great herculean task ? It can be well understood from the content depicted in the **Table – 1** below which are self explanatory.

**TABLE-1**

1. Millet is the most nutritious cereal.
2. Millet can grow well in wide range of ecological conditions (Starting from clay to clay loam and sandy loam soil.)
3. Millet requires very little water ( 5 % that of Rice and Wheat ).
4. Millet is most resistant to climatic vulnerabilities (like high temperature and low rainfall).

5. Millet is tolerant to shallow-soil ( due to its special physiological and morphological characteristics ).
6. Millet thrives well even in drought-conditions ( in drought-stress soil with low water retaining ability).
7. Millet has better tillering capacity (compensating low yield).
8. Millet can fight out crop-failure due to adverse weather (as found in other crops).
9. Millet can fight out nutritional deficiency.
10. Millet can well assure traditional values and adopt scientific practices simultaneously.
11. Millet can well resist many common diseases found in other crops.
12. Millet requires comparatively less inputs .
13. Millet is economically more viable with proper market linkage.
14. The total Millet plant helps in reducing atmospheric CO<sub>2</sub> (carbon dioxide).
15. Millet can be used for dual purpose (i.e. Nutritive food as well as forage).

As such, it can be well inferred that it is **Climate Smart** and **Eco-Friendly** Nutritive Cereal and hence, need to have preferential choice of the growers and consumers on the same line, on the back drop of shocking status of malnutrition of our country in global platform and devastating effects of climatic change today.

In addition to the above logic **Table-2** clearly indicates its food value which needs a wise and worthfull consideration so as to combat the widespread threat of malnutrition.

TABLE-2

| FOOD VALUES OF MILLET |  |  |                                 |
|-----------------------|--|--|---------------------------------|
| 1.                    | Protein  | 5% to 8%   | <b>MOST NUTRITIONAL CEREALS</b> |
| 2.                    | Carbohydrate   | 65% to 75 %  |                                 |
| 3.                    | Dietary fibers   | 15 % to 20 %   |                                 |
| 4.                    | Minerals   | 2.5 to 3.8 %   |                                 |
| 5.                    | Low fat (unsaturated)  | As low as 1.3 % only                                   |                                 |
| 6.                    | The highest amount of calcium  | 344 mg %   |                                 |
| 7.                    | Highest amount of potassium( also rich in iron and contains zinc and magnesium too ) | 408 mg %   |                                 |
| 8.                    | Non-acid forming   | Easy to digest   |                                 |
| 9.                    | Rich in amino acids  | Such as Tryptophan, Threonine, Valine, Methionine etc. |                                 |
| 10.                   | Ether extractive   | 1 to 2 %   |                                 |

A broad spectrum of its health benefits are mentioned in **Table-3** below, which justifies the given Connotation (i.e. NUTRACITAL\*\*) to Millet as mentioned in the very title of the topic, as it can provide a viable solution to a great range of lifestyle – disorders, found in the modern man today.

TABLE - 3

## HEALTH BENEFITS OF MILLET

| BENEFITS |   | CATEGORY OF PEOPLE HELPED                              |
|----------|---|--|
| 1        | Strengthens Bones ( due to high content of calcium and fights out OSTEOPOROSIS)                         | Growing Children and aging people                      |
| 2        | Reduces metabolic diseases (Due to Anti-Oxidant Activity) and controls cholesterol level in human body. | Persons prone to heart stroke and high B.P             |
| 3        | Controls Blood Sugar Level ( due to its photochemical nature )  | Persons with Diabetic and prone to its harmful effects |
| 4        | Lowers ability to increase sugar level in man   | General mass of people                                 |

|    |  |  |
|----|--|--|
| 5  | Helps reducing anemia (a condition of bloodlessness due to its high natural Iron content)      | Expectant Mothers and Low Lactating Mothers  |
| 6  | Counters and Controls a. Anxiety, b. depression and c. Insomnia like severe human elements     | Adult – Population with so called modern-style and pattern of living                           |
| 7  | Substantiously helps Migraines (with symptoms of head reeling problem)                         | People with high to very high degree of headache problem                                       |
| 8  | Green Ragi is recommended for people with liver disorder and Asthma                            | People with-these specific pathological problem  |
| 9  | Recommended for lactating mothers and would-be mothers   | Expectant Mothers, Lactating Mothers and Poor lactating Mothers                                |
| 10 | Regular intake of Millet regulates malnutrition and degenerative disease and pre mature aging. | People prone to these problems   |
| 11 | Prevents Cancer, specifically breast Cancer  | The Women prone to breast cancer   |
| 12 | Improves digestive health of man ( that is gastrointestinal system)                            | Patient with problem of a) Constipation b) Excess gas c) gastric ulcer d) bloating e) cramping |
| 13 | Keeps up the better functioning of Kidney and Liver  | Patients with Kidney and Liver disorder  |
| 14 | Optimizes the immune human system of the body  | For all  |

While realizing the nutritive value, it is quite logical to adopt scientific mode of cultivation of Millet when optimization of production and productivity is one of our goals, which is shown below in **Table- 4** in a comparative manner. For the spectacular success of Odisha Millet Mission, Govt. of Odisha has been conferred with the most prestigious and highest civilian award “SKOCH”

for its unique initiative and innovative convergence strategies and which has added one more feather in the ever dazzling agricultural crown of the state. State of Odisha being the pioneer of such farmer centric programme is requested by the Central Govt. to share its successful strategies with other states to follow the suit. Odisha is also going to take a leading role model in the ensuing International Year of Millet, declared by the U.N.

TABLE-4

## TRADITIONAL Vs. MODERN PRACTICE OF MILLET FOR ALL

|    |   |   |
|----|---|---|
| 1  | Broadcasting method of seeds was used methods are adopted (SRI-Methods)           | Line sowing and Line –Transplantation (LT)  |
| 2  | Required more seeds per Unit area   | Required lesser quantity of seeds per Unit area.  |
| 3  | Labour Cost was more and un-regulated.  | Less labour is required in field.   |
| 4  | No Inter-Cropping was done.   | Inter Cropping is introduced (ex: Yellow / Green and Black gram, giving extra benefits.             |
| 5  | No scope for fortifying the soil health.  | Soil – health well maintained and improved.   |
| 6  | Less tillage in fully grown crop.   | More tillage in fully grown - crop is well observed.  |
| 7  | Low production of crop.   | Better production well recorded.  |
| 8  | No practice of value addition of the produce.                                     | Dozens of new value addition products are prepared.   |
| 9  | No Govt. intervention or incentive was provided to farmers.                       | Presently included in PDS and SNP (in plan) with provision of minimum support price to the farmers. |
| 10 | Only locally consumed by the growers, mostly by the tribals as their staple food. | Increase of local consumption is intended with better market linkage.                               |

In spite of its nutritive value and importance it was not given due weightage rather pushed to the fringe for decades which is clearly evident from the differential figures of the area of cultivation of millet, prior to Green Revolution (1965-66) and recent years (2016-17) that is from 37+ million hectares to 14+ million hectares and the level of yield and consumption almost remained static since decades, the potent causative factors being;

- 1) Low Production / Productivity of Millet,
- 2) Low income / profitability,

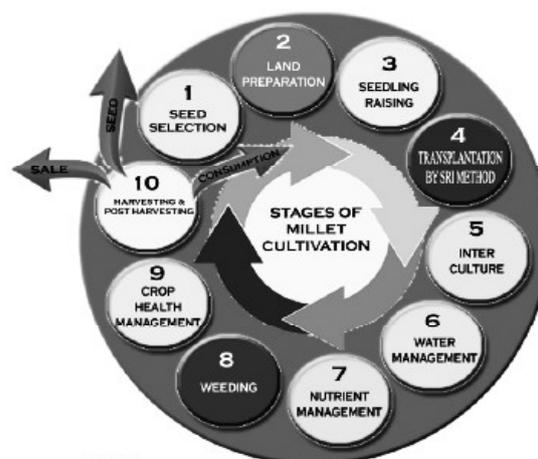


FIGURE - 2

- 3) Preference of Rice and Wheat cultivation in fertile and irrigated land by farmers,
- 4) Rapid Urbanization,
- 5) Change of Dietary habits of people,
- 6) Availability of other subsidized crops,
- 7) Marginalization and so on.

But the resulting nutritional deficiency for which India has occupied a very poor rank in Hunger Index of world, frequent seasonal disturbances and natural calamities, all of these made the scope wide open for revival of Millet, giving a new name to it as the “Magic Cereal” now, being resistant to Flood, Drought, Salinity, Diseases and even Heat Wave, in sort, resilient to climatic vulnerability. With adequate thrust and patronage of the Govt. the field execution has been done by leading local NGO’s very systematically under meticulous supervision by WASSAN starting from sensitization till harvest and post-harvest of the crop which include some other stages cyclically depicted clearly in the Figure -2.

No doubt the above process resulted in better production about which a prospective Koya farmer Sukra of Malakangiri district says, “TEGAR SOCAIT KETANA KENGE MAME GORRA YETI MATTAM, DEBEN DORKTA, GORRA BAMI GATTE DABK DORKTA I MENDE GORRA GATTE YETITAM”, which means being highly encouraged and guided by Tagore society, I have put some of my land for millet cultivation and feel happy for getting better yield and higher price and hence decide to put more land areas for millet in future.

Some local tribal SHGs expressed their contented involvement in this millet mission at Malkanagiri saying “MUNNE MAME ERR MAT

BUMTAGAYATIMATAM, GATTE GORA PAITIA” SADKADMAT ITKE BUMTAD DEBEN GORRAPAIO, ERR MAT TOSITAN, GORRA MIKA DIBEN PAITITA”, which means being inspired for the millet cultivation, we too have prepared a lot of liquid manure from the urine of our cattle stock which is an indigenous technique for beneficial use of the crop .

Field organizer, Rakesh of Tagore Society for Rural Development (TSRD) a leading NGO of Malkanagiri district says, “we are satisfied implementing this farmer centric special programme of OMM in this tribal hinterland, because we are ahead of our target in the achievement of millet cultivation and have to maintain the tempo among the tribal stakeholders in a sustainable manner, aiming at increasing the level of consumption both in rural and urban areas and too go ahead with a prospective plan to put the surplus millet for popular value addition products in future in a big way.

Before ending the article, the major achievements and the task ahead of this Millet Mission ought to be highlighted for an easy and wholesome comprehension of the readers about its future road map, some of which are enumerated below:-

- 1) A better trend of production (i.e) (5-8 quintals/per acre) in comparison with yester years yield (i.e) (4-5 quintals/per acre) is well observed after induction of field level **Experimentation, Demonstration and Dissemination** of improved practices. The best output is expected in future years (i.e) (10-15 quintals/Ha).
- 2) The budgetary allocation of Rs. 100 Cr. of the Govt. for the procurement of the produce

- at the nearest suitable place of the prospective farmers (in Mandis) in addition to increased MSP (minimum support price) around Rs. 3,000 per quintal would definitely gear up better production of millet in future.
- 3) Setting up off processing units at panchayat and block levels (is already in Govt. plan) would give its growers a great deal of satisfaction and act as an incentive for its large scale production in future.
  - 4) Linking of the produce with a variety of choicest edible products which are both nutritious and tasty would definitely give a positive push for its producers and attract entrepreneurs. More than dozens of such products starting from baby food, breakfast to bed time foods and beverages are catching up to Domestic kitchen, Hotels, Cafes and even Casinos. Some of the recipes of Millet are:-
    - a. Idli, b. Upama, c. Khichdi, d. Dosa, e. Pakoda, f. Bada, g. Biscuit, h. Cake, i. Flakes, j. Roti, k. Chhapati, l. Khir, m. Halwa, n. Samosa, o. Ice cream etc. popularization of which are made in food festivals and exhibitions with big dignitaries and celebrities which are attracting the consumers in a big way. Special recipe books have also been published in foreign countries.
  - 5) Inclusion of Millet in MDM of Schools of Anganwadis of ICDS and PDS have already started its implementation in 7 Tribal districts of Odisha including Malakanagiri and in future going to enter into SNP (State Nutritional Programme) of Odisha, infallibly making millet most sustainable.
  - 6) Rising millet to the prospective export markets are being well planned and executed through nodal agencies involving small entrepreneurs and corporate sectors to boost up its consumption, are well triggered for better return.
  - 7) Selling out of the products through farmers producers organizations (FPOs), co-operatives and TDCC in tribal dominated areas would give the farmers direct financial benefit, expelling the middle man involvement and distress selling which can no doubt combinedly contribute towards financial empowerment of the resource – poor tribals peasantry/community and improve substantially their socio-economic standard.
  - 8) So far scientists have proved to be successful in controlling some commonly occurring diseases like, “Blast” in finger millet “Head smut” in kangu millet “Pest” in fox millet and “Grain smut” in little millet and so on, which would clear the barriers and give way for better production of the commonly cultivated varieties in future.
  - 9) Research centres established in different states including one in Berhampur of Odisha under OUAT is trying to improve the methods of production and productivity, technology for minimizing the cost of production and hence, would add to its better profitability in future.
  - 10) IIMR (Indian Institute of Millet Research) is also trying to make it globally competitive by creating better market demand and maintain its long term sustainability with optimization of the available technologies and finding new avenues for its versatile

utilization, (e.g. through Ready to use Technologies) to improve its status in agro calendar of farmers.

- 11) When the Govt. of India has decided to set up a CoE (Centre of Excellence) for millet in the state of Odisha to strengthen its Value Addition Products and processing for expanding its utility in future, it would definitely act as an extra impetus for its progress.
- 12) Similarly Institutions like All India Co-operative for Small Millet Improvement Project (AICSMIP) and Projects on Intensification Research on Cotton, Oil seeds & Millet (PIRCOM) are working to improve its quality by controlling diseases of the Millet and so far 22 new such varieties of Millet, (8 for Finger Millet, 5 each for Proso & Kodo, 3 for Little Millet and 1 for Fox Millet) have come up which would go a big way in enhancing the productivity in coming years. Introduction of low cost and simple machinery like Millet Husker and Destoner would save a lot of time and labour during its harvesting, giving a great relief to the women folk engaged in the task.
- 13) As per the result of market survey an increasing trend of global population towards healthy food habits for lifelong fitness, preferring millet products worldwide now a days (i.e in Asia, South & North America, Latin American countries, Middle East countries, Africa and some parts of

Australia) ascribing it a “**Super Crop**” status.

- 14) Adaptation of integrated farming of Millet with propagation of plethora of other such prospective programmes in convergence techniques also would lead the most coveted course of action for enhancing millet’s popularity and profitability in coming years.

As such, one can well infer that, days are gone when millet was mostly marginalized, elbowed aside and eschewed by the elites and now, the tiny seed is on its onward march to attend the status of “Mighty Millet”. Days are not very far, when not only in Odisha or India, but throughout the World it will be No.1 “Nutri Cereal” pushing behind other popular crops proving its most sacred description as “SRI DHANYA” found in “YAJUR VEDA” and “HOLY CROP” as connoted in Chinese Mythology. Thanks to the Govt. for its bulwark aiming at Millet’s Conservation, Cultivation and Consumption making the dream come true, ushering a better and brighter tomorrow for the whole mankind.

*[NUTRACITAL: Denotes a food stuff (such as fortified food or Dietary supplement) that provides health benefits in addition to its basic nutritional value. e.g. NUTRITIVE+(PHARM)(ACEUTICAL)]*

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# Global Climate Change

*Dr. Manas Ranjan Senapati*

The surface temperature of Venus is around 460°C. In the case of Mars, the temperature can dip to as low as -140°C. The reason is not only the distance factor but also the amount of carbon dioxide (CO<sub>2</sub>) present in the atmosphere. The atmosphere of Venus comprises mostly of CO<sub>2</sub> that prevents the heat from escaping, thus turning the planet into a furnace. The planet Mars on the other hand lacks a thick atmosphere that can retain heat. Earth has the right amount of CO<sub>2</sub> in the atmosphere that traps the right amount of heat from escaping thus making our planet neither extremely hot nor cold. An increase of CO<sub>2</sub> level should theoretically speaking result in increased temperature. Carbon dioxide is called a green house gas (GHG) and the way heat is trapped in the atmosphere by CO<sub>2</sub> and other green house gases is called the greenhouse effect. Carbon dioxide is the most important anthropogenic gas having atmospheric lifetime of about 120 years the growth-rate of which was larger during the last 10 years at the rate of 1.9 ppm per year. The safe concentration of atmospheric carbon dioxide is 350 ppm. At present, the amount of CO<sub>2</sub> in the atmosphere is 408 ppm compared to preindustrial level of 280ppm. A record which indicates CO<sub>2</sub> levels staying within a range of between 180ppm and 280ppm throughout the last 800,000 years.

We're going up at 2 ppm per year, says geochemist Wallace Broecker of Columbia University. Hence 450ppm is only 30 years away. We'd be lucky if we could stop at 550 ppm. In comparison, the amount of oxygen is 210,000 ppm. Some other gases that contribute to warming include methane, nitrous oxide, water vapour and chlorofluorocarbons. Carbon dioxide, with its enormous annual increase in concentration, contributes most, at 61%. Methane is second in importance, at 15%, CFC-12 is third, contributing 7%, and nitrous oxide fourth with 4% of the warming under these assumptions. Green house gases once emitted stay in the atmosphere for decades. An increase in average global temperatures of approximately 0.56 K has been measured over the past century. This increase is called global climate change or global warming. The gases with three or more atoms that have higher heat capacities than those of O<sub>2</sub> and N<sub>2</sub> cause the greenhouse effect. Carbon dioxide (CO<sub>2</sub>) is a main greenhouse gas contributing 9-26% associated with global climate change. **Global warming potential (GWP)** is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the gas in question to that of the same mass of carbon dioxide

(whose GWP is by convention equal to 1). A GWP is calculated over a specific time interval and this time interval must be stated whenever a GWP is quoted or else the value is meaningless. *Overall, the global annual temperature has increased at an average rate of 0.07°C (0.13°F) per decade since 1880 and at an average rate of 0.17°C (0.31°F) per decade since 1970.*

There has been a sudden increase in the atmospheric CO<sub>2</sub> since 2001. The natural sinks for instance; forests and oceans may be losing their ability to absorb CO<sub>2</sub>. A study of ocean data between 2000 and 2007 showed that ocean's ability to absorb CO<sub>2</sub> reduced from 27 per cent to 24 per cent. According to recent observations of ice loss, Antarctica could shrink by 33 per cent by 2100, leading to a sea-level rise of 1.4 meters.

It is estimated that volcanoes release about 130–230 million tonnes (145–255 million tons) of CO<sub>2</sub> into the atmosphere each year. Human activities such as the combustion of fossil fuels and deforestation have caused the atmospheric concentration of carbon dioxide to increase by about 35% since the beginning of the age of industrialization. One liter of gasoline, when used as a fuel, produces about 2.32 kg of carbon

dioxide. “To solve the problem, we need to eliminate net emissions of CO<sub>2</sub> entirely,” physicist Myles Allen of the University of Oxford says. Emissions need to fall by 2 to 2.5 percent per year from now on.

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## Live and Let Live

# Climate Is Changing, Why Not We ?

*Santosh Pattanaik*

“You have stolen my dreams and my childhood with your empty words. People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction. And all you can talk about is money and fairytales of eternal economic growth. How dare you ! For more than 30 years, science has been crystal clear. How dare you continue to look away, and come here saying that you are doing enough, when the politics and solutions needed are still nowhere in sight.” - This is how an emotionally upset Greta Thunberg, the 16-year-old climate activist from Sweden, expressed her genuine feelings at the UN Climate Summit on September 23, 2019.

Mother Earth, the most beautiful planet in our solar system is God’s greatest gift to the mankind. God created this earth for all the living beings, be it human beings, plants or animals with the tenet of Live and Let Live. **Earth provides enough to satisfy every man’s needs, but not every man’s greed.** Over the years, earth is being grossly abused and plundered at an alarming pace, without caring a bit for its devastating effects. We destroyed forests and killed countless birds and animals for our use. Today, our environment is totally polluted - we drink polluted water, inhale dusty air, and eat food with traces

of pesticides and toxic chemicals. Whether we admit it or not, climate breakdown is already upon us : there are record-breaking heat waves, flash floods, intense and frequent wildfires, tropical storms, and hurricanes. Glaciers are melting, sea levels are rising, greenhouse gas is escalating. Entire environment is polluted by radioactive elements, plastics, sewage, domestic waste and industrial pollution. Climate change has become a direct threat to agriculture. Degradation of soil and extreme natural disasters directly affects our ability to produce the food we consume for ourselves and the entire world.

Global warming has caused ocean acidity, thereby affecting the natural production and reproduction of animals, as well as killing them. From polar bears losing the ice underneath their feet, to coral and shell-fish suffering from the increase of ocean water’s pH, global warming is affecting marine life severely. Our negative contributions to climate change is increasing the extinction rate for all species by 10,000 times ! In a recent chilling assessment, the World Health Organization reported that human-induced changes in the Earth’s climate, now lead to at least 5 million cases of illness and more than 150,000 deaths every year. It’s high time that we take a serious note of India’s pathetic ranking in the 2018

Global Environmental Performance Index (EPI) - 177 position, down from 141, two years ago in the list of 180 countries. If we acknowledge climate breakdown to be true, what is our response? Had we been serious, soon after it became a live issue following the Rio Earth Summit in 1992, or the Paris Agreement in 2015, we would have put in place genuine constraints on emissions world-wide. Alas, we didn't. As a result, our mother earth is getting sick day by day. We need to save her before she dies. Simply realizing our fault is not the solution. We need to act fast, time is running out.

There are some stumbling blocks that make it hard for people to get motivated and act on climate change. First and foremost, there are skeptics who argue that it is not certain that the influence of human activity on climate will have such dire consequences that some experts project. Second, many effects of climate change are quite at a distance from most of the people. As a result, they don't grapple with the specifics of climate change, but rather treat it as an abstract concept. And abstract concepts simply don't motivate people to act as forcefully as specific ones do. Third, ignoring climate change in the short term has benefits both to individuals and to organizations. Individuals do not have to make changes in the cars they drive, the products they buy, or the homes they live in. Companies can keep manufacturing cost cheaper if they don't have to develop new processes to limit carbon emissions. Governments too, can save money by relying on existing methods for generating power that involve combustion, rather than developing and improving sources of green energy, even though they are more cost-effective and beneficial in the long run.

Although all these factors are working against us, there is still hope. While it's a clarion call to all the country heads to act fast on a war footing, so as to bring a change in the habits, beliefs and technologies that cause civilizations to emit greenhouse gases, every citizen too, has a vital role in combating climate change. When it comes to global warming, everybody wants to change the world, but nobody wants to change himself. So you must be the change, you wish to see in the world. Do your part to make your difference in the world, and urge others to do the same.

**What you can do?** Save our sweet, little sensitive birds - keep a bowl filled with fresh water and a bowl with grains at your balcony. Support clean and renewal energy. Buy green products, replace incandescent light bulbs with LED bulbs, buy energy-efficient electronics appliances. Reduce your use of fossil fuels, prefer car-pooling or use public transport, use a bicycle as much as possible. Plant trees, don't allow anyone to cut trees, protect native forests as "carbon storehouses". Don't misuse precious water and electricity. Don't use plastics when you can avoid it. Save wild animals. Make students and citizens aware of the importance of saving the environment, and the things that we can do to protect our environment, forests and wildlife. Speak out and write against polluting industries. Ask the government to use non-conventional energy resources (wind, water, sunlight, and biomass). Reduce, Re-use and Re-cycle. By taking these simple steps, you'll be on your way to help stop global warming and save Mother Earth.

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# Environment and the Perilous Plastic

*Akshaya Kumar Nayak*

Greta Thunberg (16), a school girl's heart touching cry before the world politicians in a session of UNO Summit for CLIMATE CHANGE stunned all the participants to a great extent.

Mother's lap for a child is so peaceful, blissful, comfortable and safe that he feels the entire heaven exists in it. Likewise, our beautiful, glamorous, green Mother Earth brings up us in her affectionate lap with all love and comfort, shelter to live in, good food, pure water and clean air for our sustenance. But at present that prevailed situation has changed to a large extent.

The environmental condition has deteriorated to a large extent. Population growth plays an important role. Human population is steadily and abnormally increasing. Monaco, in the world, is the most densely populated country having a population density of 26,243/Sq. Km. (2019). It is 147/Sq. Km. in China and 325/ Sq. Km. in India. Population of China and India is 142,00,62,022 and 136,87,37,515 respectively. The annual growth rate of China and India is 0.35% and 1.08% respectively. It is expected that India's population will surpass that of China in 2022. At present world population has increased to 769.2 crores from 614.5 crores in 2000 and that of India 136.4 crores from 105.31 in 2000.

This sort of explosion of population causes environmental degradation and leads to CLIMATE CHANGE.

## GLOBAL WARMING

Increase in global temperature is a natural phenomenon. "The warming of the climate system is unequivocal, as is now evident from increase in global average air and ocean temperatures, wide spread melting of snow and ice and rising of global mean sea level" says a report by IPCC. (Inter governmental Panel on Climate Change)

Since 2 million years, world temperature has been increasing. The UN Framework Convention on Climate Change (UNFCCC) was held in 1992. From 1960 continuous direct atmospheric measurement began up to 2005. It was observed that CO<sub>2</sub> radiative forcing increased by 20% during 1995-2005; the largest change for any decade in atleast the last 200 years — points out RK Pachauri, Chairman of the IPCC and DG of The Energy and Resources Institute, New Delhi.

Basing on an analysis of ice cores spanning thousands of years, the report concludes that anthropogenic emissions have resulted in a marked increase in atmospheric concentrations of CO<sub>2</sub>, Methane (CH<sub>4</sub>) and Nitrous Oxide

(N<sub>2</sub>O) since 1750 and now far exceed “pre-industrialization values. The increase in CO<sub>2</sub> concentration is primarily for fossil fuel use and land use change increases CH<sub>4</sub> & N<sub>2</sub>O concentration only for agriculture. In particular the increase in CO<sub>2</sub> concentration from 280 ppm (parts per million) to 379 ppm in 2005 is far greater than the natural increase (from 180 ppm to 300 ppm) over the last 650,000 years.

### DEFORESTATION – ITS EFFECT ON GLOBAL WARMING

Deforestation has an important bearing on **Global Climate Change**. More than 1.5 billion tons of CO<sub>2</sub> is released to the atmosphere. It is a very serious matter that about half the world’s tropical forests have been cleared. An area of the size of a football pitch is cleared from the Amazon Rain Forest every minute. The globe lost 73.4 million Acres of tree cover in 2016. It is estimated that 15% of Green House Gases is due to deforestation.

### CLIMATE CHANGE

Various factors are responsible for CLIMATE CHANGE as discussed earlier. Every year the atmosphere is being loaded with enormous quantities of GHG<sub>s</sub> and aerosols. Carbon emission of 4 leading countries of the world, (2015) is given below which needs steps to be taken by those countries to reduce the emission.

| Country | Carbon emission in MMT | Share in % | Per capita CO <sub>2</sub> emission in Metric Ton |      |
|---------|------------------------|------------|---|------|
|         |                        |            | 2015  | 2016 |
| China   | 9040.74                | 27.21      | 6.59  | 6.4  |

|        |         |       |       |      |
|--------|---------|-------|-------|------|
| USA    | 4997.50 | 14.58 | 15.53 | 15.0 |
| India  | 2066.01 | 6.82  | 1.58  | 1.6  |
| Russia | 1468.99 | 4.68  |       | 9.9  |

On the basis of model studies, the report projects a warming of 0.2<sup>o</sup> C a decade for the range of emission scenarios considered. This says that even if the concentrations of all GHG<sub>s</sub> and aerosols had been kept constant at the year 2000 levels, a further warming of about 0.1<sup>o</sup> C a decade would be expected. If CHG emission at or above current rates continues, it would cause further warming and induce many changes in global climate system during 21<sup>st</sup> century (very likely greater than 90% be larger than those observed during the 20<sup>th</sup> century)

It is presumed that no nation can afford to be complacent on the issue any more. There is pressure mounting on all countries to act decisively including developed countries.

The IPCC (Intergovernmental Panel on Climate Change) of UNO took a historical decision to keep the 2<sup>o</sup> C increase of average temperature which remained before the Industrial Revolution (1750).

**An interesting new:-** China and Germany are the two countries in the world doing business in pencil having many pencil industries which need trees for its making. For this huge number trees are required. Keeping in view the sacrifice of trees and to save the Environment a Canadian Company has started marketing of Plantable Pencils. When a pencil becomes smaller after use instead of throwing, it is dibbled in soil which gives rise to a seedling. Its cost comes to rupees eight to nine. This is a good endeavour for protection of environment.

Greta Thunberg (born on 3.1.2003) a Swedish teen age environment activist on **climate change**, leaving the school organized a huge revolution /campaign of youths and others in front of the Swedish Parliament demanding justice for Climate Change regularly from 2018 who staged a protest on 23.09.2019 in the UNO Summit before the world politicians of 12 countries present, accusing them that they have failed to face the Climate Change. All members were stunned on her wonderful deliberation: Her heart touching speech moved all who extolled immensely. Her campaigning has gained international recognition.

#### **SOIL POLLUTION:-**

Soil is contaminated to a large extent by the toxic chemicals, industrial waste like gases, agricultural pesticides, mining landfills and huge amount of waste water or sewage water generated from the cities of India which is discharged mostly without any treatment into the surface water sources damaging the quality of river water in the nearby cities. This polluted water is used for irrigating which results in the heavy metal build up in soils which are harmful for agricultural products.

In a recent study conducted by CSIR and NEERI reveals that vegetables grown on the flood plain of the Yamuna River (a dead river as called by the CPCB- Central Pollution Control Board) contain heavy metals of toxicity like Lead (Pb), Cadmium (Cd), Mercury (Hg) and Nickel (Ni). They stated that the metal content exceeded the safe limits of FSSAI-(Food Safety and Standard Authority of India). These toxic metals present in the vegetables could trigger serious human health diseases including cancer and organ malnutrition

[World Food Day issue of Science Reporter, October, 2019].

#### **WATER POLLUTION:-**

Water is a precious gift of Nature for life-sustenance. Water bodies like, reservoirs, rivers, lakes, oceans etc. are getting polluted mostly by human activities. Industries produce huge quantity of waste products like lead, mercury, sulphur, asbestos etc. harmful chemicals; garbages, sewage water, plastic etc. which contaminate water bodies; as a result, drinking water both for human and wild life becomes harmful. So also the marine biosphere is affected. About 2 crore people of the world use polluted drinking water-(WHO). Many of them die due to water borne diseases. It is an interesting matter which is worth mentioning here, as to why the river Ganga has been treated so pious and holy since time immemorial and why the Ganga water is sought after for worships and rituals.

A study was commissioned by the “Water Resources Ministry” into probe the “unique properties” of the Ganga. To study “Assessment Water Qualities and to understand special properties of river Ganga” a team of Nagpur Based NEERI (National Environmental Engineering and Research Institute) was tasked the assessment work in 2016 for radiological, micro-biological and biological parameters. As a part of this assessment 5 pathogenic species of bacteria (*Escherichia*, *Enterobacter*, *Saimonella*, *Shigella* and *Vibria*) were selected and isolated from the Ganga, the Yamuna and the Narmada and their numbers compared with the bacteriophage present in the river water because bacteriophages are a kind of virus that kill bacteria; they are found in proximity to each other. It was found that the sample drawn from

the Ganga contained almost 1100 kinds of bacteriophages and proportionately there were less than 200 species detected in the samples brought from the Yamuna and Narmada. However, these antibacterial properties varied widely along the length of the river. (length of the Ganga and the Narmada are 2525 Km and 1312 Km respectively.) But at present the downstream of the Ganga has become more polluted by human agency. At present the Govt. of India has taken steps to clean the Ganga.

### PLASTICS:-

PLASTIC is a Greek word. In Greek language the meaning of plastic is to build or to shape. Wallace H. Carothers, a scientist of Chemistry brought PLASTIC to the knowledge of people. Plastic belongs to the family of Polymers. Polymers having quality of flexibility are called plastic; A Polymer called Polythene was discovered in a Chemical factory in England which was used in 2<sup>nd</sup> World War by British soldiers. From these, for use in everyday life, many beautiful and cheaper and light-weight articles are prepared. We developed so much love for plastic that our love affair with it knew no bounds. Its use in various fields i.e., for carrying, transporting solids and liquids, packaging etc. manifold requirements has become inevitable. It has spreading network in our lives. But now it has become a curse to all human and living beings (including wildlife and marine biosphere).

There are seven type of plastics in use. Those are:-

1. Polyethylene Terephthalate [PET OR PETE]
2. High Density Polyethylene [HDPE]
3. Poly Vinyl Chloride [PVC]

4. Low Density Polyethylene [LDPE]
5. Poly Propylene [PP]
6. Poly Styrene [PS]
7. Others

Each is different from the other; some re-useable, the other produces hazardous material after several uses, some are easily recyclable; others need more sophisticated and intricate handling in its recycling process.

Plastic produced 50 Million Metric Tons in 1960 has now reached more than 300 MMT in the world. It is observed that Asia continent is the main breeding place in the world. However, the following is a worldwide short-list of production and consumption of plastic during 2014-2015.

| COUNTRY | PRODUCTION               |             | CONSUMPTION |                             |
|---------|--------------------------|-------------|-------------|-----------------------------|
|         | In Million. M.T(2014-15) | In Kg/ head | In Kg/ head | Top Pollutants in the World |
| China   | 60.0                     | 38          |             | China                       |
| U.S.A   | 38.0                     | 109         |             | Indonesia                   |
| Germany | 14.5                     |             |             | Philippines                 |
| Brazil  | 12.0                     | 32          |             | Vietnam                     |
| India   | 9.49                     | 11          |             |                             |
| Europe  |                          | 75          |             | Sri Lanka                   |
| World   | 300.0                    | 28          |             |                             |

### As per Economic Forum Report:

In India- Plastic waste Production/ day =16,000 M.T

In world – Plastic Bottles used/ minute=1 million

In world- Plastic (SU) Bags thrown/year=5 Trillion

Plastic bottles need about 1000 years for its degradation. Sikkim is the first State in India to impose restrictions on plastic. Now restriction has been imposed in 20 states and one union territory.

Plastic/ polythene is not biodegradable. Its waste about 50% is thrown away to roads, and streets forming even heaps. It is estimated that 20% of the world production is recycled, about 39% is covered under soil pits and 15% plastic waste is burnt which generates poisonous gases like Dioxin, Benzene, CO<sub>2</sub> etc. Chlorinated plastic releases harmful chemicals to soil/ earth which permeates into the underground water and contaminates it causing health hazards.

**As per WWF (World Wildlife Fund):** Big plastic pieces are broken into small and micro particles due to the atmospheric heat and air which enters in to the Rivers, Nalags, and Ocean etc. Fishes and marine creatures thinking the micro particles to be planktons eat and get health hazards. As per the report, 2000 extremely thin plastic pieces are entering into our body.

Cows and other cattle suffer and even die for eating polythene bags containing left over foodstuffs.

It is reported that from 41 lakh ton plastic waste 127 crore pieces of plastic enter in to the sea. Out of this about 90% plastic pass into sea from 9 main rivers (Biggest river of Asia- Chyang Xiang has more than 14 lakh tons of plastic waste). Scientists have also traced plastic waste under 36,000 feet below the mean sea level. Total plastic in the ocean, it is estimated, is 150 million

Metric Tonnes. In 2014, there was one kg of plastic for every five kg of fishes and by 2050 there will be more plastic pieces than fishes. Some researchers estimated- same quantity of plastic will enter the Pacific Ocean as has been deposited from 1950 to 2016, i.e, about 30 crore tones. For this plastic waste contamination annually 600 marine species are affected, 10 lakh marine birds and one lakh aquatic mammals die and respiratory system of turtles is affected.

#### **VIENA MEDICAL UNIVERSITY RESEARCHERS VIEW:-**

9 varieties of plastics enter in to human body (belly) and gradually it damages the kidney and reduces immunity of the body.

#### **AUSTRALIA NUCLEAR UNIVERSITY RESEARCHERS VIEW :-**

One man eats about 5 Kg of plastic. When plastic burns it produces CO<sub>2</sub> and by 2030 it will be 3 times as produced at present.

As per the statement released by the Ministry of Environment and Forest, Climate Change, the resolutions (on single use plastic and sustainable Nitrogen Management) were adopted at the 4<sup>th</sup> session of the UNEA (United Nations Environment Assembly) held at Nairobi from March 11<sup>th</sup> to 15<sup>th</sup> 2019 and on innovative solutions for Environment Challenges and sustainable production and consumption. Global N<sub>2</sub> (Nitrogen) proportion in atmosphere is 78%. Its use efficiency is low causing pollution by reacting N<sub>2</sub> which threatens the Eco System Services and human health. This contributes to Climate Change and atmospheric Ozone depletion.

Only a small proportion of plastic produced globally is recycled and most of this damage the environment and aquatic bio-diversity. The resolution engulfing these global challenges were piloted by India in the UNEA were vital issues, - a first step towards addressing these to attract the focus of the global community.

**Plastic ban** has been implemented by Govt of Odisha from 2<sup>nd</sup> October, 2019 [especially in 5 Municipal Corporations, 48 Municipalities and 61 NAC<sub>s</sub>]. Vendors have been given a month relaxation to get rid of the stock. The Forest and Environment Deptt. has directed all district administrations to ensure strict enforcement of the ban on single use plastic. Odisha State Pollution Control Board will ensure close down of industries, importing, storing, carrying, transporting and distributing in all cities of the State There is also penal provision for violation.

#### **Remedial measures:-**

Public awareness for indiscriminate use and its hazardous/harmful impact on environment and health is to be created across the State by print and electronic media, NGOs and Environment activists.

**Alternatives:-** To replace plastic polythene bags:- Bags made of cotton, jute, paper and palm

leave are to be adopted and for liquid – glass or metal containers to be used.

#### **Swachhata (Cleanliness)**

This year, to honour with a tribute, we are celebrating the 150<sup>th</sup> birth anniversary of Mahatma Gandhi, a visionary leader, motivator and a crusader of peace, nonviolence and an ambassador of health. He has truly indicated that a sincere endeavour with due care for “Swachhata” (cleanliness) is as much necessary as required for protection of independence of the country. When in South Africa he had realized that every individual should be a sweeper. In his opinion, unless we come forward holding a bucket and broom to clean our house, village and to obtain a good environment city it is difficult to build a green, beautiful, blissful, peaceful and affectionate society.

#### **Good news:-**

Japan’s scientists have invented a kind of Microbe [DPETASE] which can degrade plastics.

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Akshaya Kumar Nayak, Retd. Forest Officer, Odisha, Bhubaneswar.

## Media and Social Responsibility

*Barada Prasanna Das*

Media means Radio, Television, Newspapers, Magazines and internet. Mahatma Gandhi said, one of the objects of a newspaper is to understand the popular feeling and give expression to it, another is to arouse in people certain desirable sentiments, the third is to fearlessly expose popular defects.

The first newspaper of Indian was published in 1781. This publication namely Bengal Gezette was prohibited by Warren Hestings. During British rule, freedom was given to Indian Press by Lord Metcalfe. The great social reformer Raja Ramamohan Roy was a spokesman of the freedom of newspaper. He has written that where freedom of press is not existed and grievances, consequently remained unrepresentable and unredressed, innumerable revolution have taken place in all parts of the globe or if prevented by the armed force of the govt. the people continued ready for insurrection.

The voice of the society is media. Before analysing social responsibility, we must discuss about the present social scenario of problems. The first and foremost problem is rapid population growth. Unless this is checked, we can't live in peace. At present population of the world is 700 crore. In 2030, it may increase to 800 crore. Next to China is India in population growth. Population

growth in India is 1.7% whereas in China it is 0.7%. In the year 2030, it is assessed by the thinkers that if this ratio continues, then India will be the topper in World Population. In Election Manifesto, none of the political parties mentioned to check population explosion. Unless we are conscious about this acute problem, the future will be dark. Because population growth leads to all types of unsocial activities, shortage of food, land etc.

Then comes slogan of our Prime Minister, Beti Padhao, Beti Bachao. Padhao means to develop the women literacy to lead a family. Bachao means they are being killed from the beginning stage in order to save the parents from dowry in future. Dowry prohibition act is in force. But the result is not as per the expectations. Doctors should not be blamed or arrested under PNDT Act. People rush after Doctor not the Doctor is coming to parents for abortion of girl child.

Third one is pollution of environment by Industries, vehicular smoke, deforestation, population explosion etc. Unless we take precautionary measures against global warming, then our existence is difficult. Then comes the topic of corruption. To check the corruption, Right to

Information Act, Vigilance, CBI have become more active.

These are the major issues to be brought to the notice of public besides investigative or interpretative news in Media. Besides, the blind beliefs have to be eradicated. The religious Gurus play vital role now a days to hypnotise large public because of ignorance about truth. We have totally

forgotten our Hindu Shastra–Vedas. Lack of proper guidance people fail to analyse the path of truth. Hence, Media plays a vital role for social reforms.

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## Paris

*Sonali Mohapatra*

I was not there  
but i saw it  
the carnage, the riots  
the bullets and their trajectories  
until they hit their soft targets  
and impaled them on the spot.

I was not there  
but i felt it  
the hate, the insecurity, the  
inferior complexity, the obsessiveness  
over religion, clawing out sentences,  
finding hidden meanings and innuendoes  
until they clawed themselves apart  
and became walking mindless machines  
of human-made fate.

I was not there  
but i heard it  
the cries of terror, the silent screams,  
the quickened heartbeats frightened  
for their children's sakes, the shuffled feet  
and dragging legs leaving a

trail of red, trying to find safety  
in a city exposed wide to the heavens  
and the hell.

I was not there  
but i went into shock  
I shook my subconscious  
over and over again until I cried  
and spent myself, I drew  
charcoal from my eyes and resolved  
to wage love against hate.

You were not there  
you were lucky  
but hear me now, look inside  
fill your lungs with air and answer me this  
will you not stand with them ?

[N.B : This poem stands up boldly for the small 'i' movement which strives to reduce the importance of the self or our egos in the grand scheme of the universe by using a small 'i' instead of the conventional capital "I" to denote the first person.]

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## When Spring Comes

*Prabhudutt Dash*

Dead dreams rejuvenate in the mellow fragrance of sweet flower.  
The leaves appear the trees are laden with soft buds.  
A sudden excitement of fun and mirth fills in a broken heart.  
It is a season of fruitfulness and joy.  
The cruel summer takes peace from peasants and artisans.  
Spring comes with lots of hope and benediction.  
Rich harvest of agricultural produce gives peace and contentment.  
Chirping of little birds fills the atmosphere with joy and merriment.  
Litterateurs are filled with fun and excitement.  
There is God's plenty everywhere.  
A source of inspiration, it whets the appetite of creative writers and poets.  
The village and grass fields are filled with snow.  
An occasional hailstorm and rainbows beautify Nature.  
Best among all seasons, the spring is symbol of fertility and fulfilness.  
The pain of winter turns into pleasure of spring.  
The season of all seasons, the spring fills void with hope and aspiration.

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